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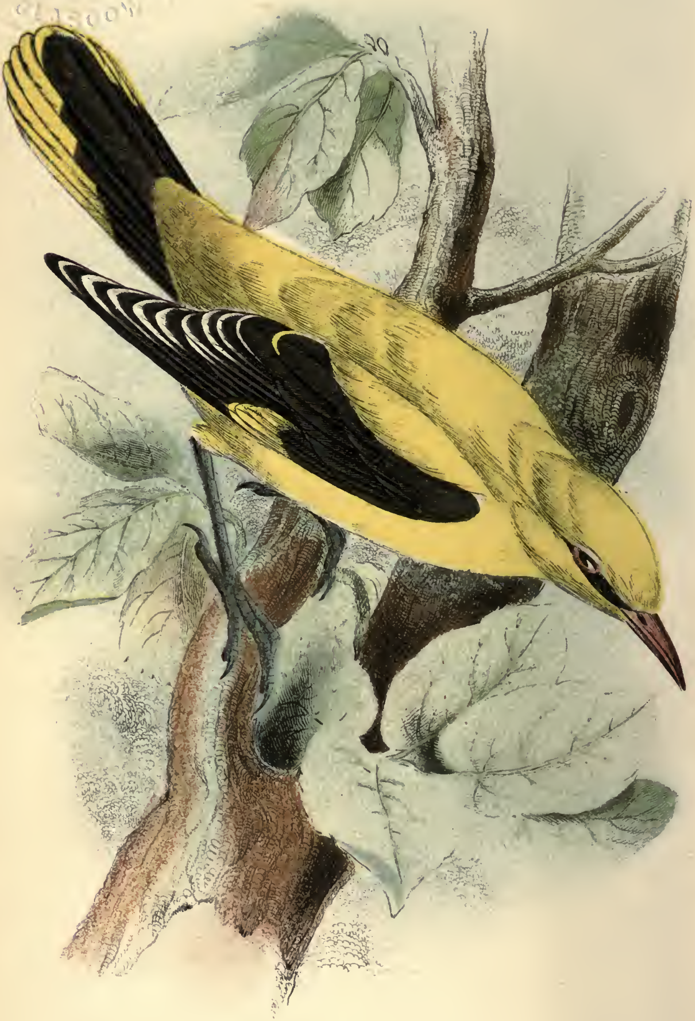

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EDITED BY R. BOWDLER SHARPE, LL.D., F.L.S., ETC.

A HAND-BOOK
TO THE
BIRDS
OF
GREAT BRITAIN.

BY

R. BOWDLER SHARPE, LL.D.,

ZOOLOGICAL DEPARTMENT, BRITISH MUSEUM.

VOL. I.

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PREFACE.

EVERY ornithologist who, in the course of his career, may be called upon to write a book upon British Birds, will always find this to be one of the most interesting, but certainly one of the most difficult, tasks which he has ever undertaken. He is sure to discover that not only is the path well-worn, but that the work of his many predecessors has been so well done that little chance of originality remains to him. No country in the world has had more excellent books written about its birds than Great Britain, whether we consider illustrated works, such as those of Selby and Gould, or the attractive "Coloured Figures of British Birds," now being published by Lord Lilford; or the many exhaustive books on the life-histories of our native birds, such as those of Macgillivray, Yarrell, and others; or the excellent works on eggs published by Hewitson and Seebohm.

Of the two leading publications on the subject, viz., those of Macgillivray and Yarrell, the palm for scientific merit must be given to that of the Scotch naturalist, and the increasing value of his works, day by day and year by year, testifies to an appreciation of his labour which would have gladdened and cheered him in his work, had such regard been bestowed upon him during his lifetime. The popularity of Yarrell's "History of British Birds," with its exquisite little woodcuts, completely eclipsed the more modest publication of Macgillivray, and it has been left to the present generation of ornithologists to recognise the full value of the varied and original work done by the last named naturalist. Not that we wish by writing thus to detract for one moment from the worth of Yarrell's publications, for, had his work been anything but excellent, it would have been impossible, even for so good an editor as Professor Newton, to have founded on it that fourth edition to which English ornithologists owe so much. As completed by Mr. Howard Saunders, this edition of Yarrell's "British Birds" stands pre-eminent among the works on the subject.

There are many of us still living who remember the enthusiasm with which John Gould set about the production of that magnificent series of volumes on the "Birds of Great Britain," with which his name will for ever be connected. The letterpress may be ordinary, as much of it is, but no one can fail to appreciate the loving care which must have animated the author in the production of the illustrations, and no country in the world can boast a finer presentment of its native birds than is to be found in the figures in Gould's work.

One of the most valuable contributions to the history of our British birds published of late years is the "Manual" of Mr. Howard Saunders, a model of condensation and an epitome of useful information concerning the Avi-fauna of Great Britain, and it would have given us great pleasure had we been able to induce the author of the "Manual" to write the volumes on "British Birds" for the new edition of the "Naturalist's Library." It was with great regret that Mr. Howard Saunders found that his other engagements prevented him from accepting the offer of the publishers to contribute to the present series of volumes. He has, however, kindly assisted by suggestions and advice.

But there is still another work on the birds of Great Britain

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which we have to notice—Mr. Seebohm's four volumes on "British Birds." The constant use which we have made of our friend's writings in the course of the present volume, is the best testimony—if further testimony be needed—to the opinion we have often expressed of the excellence of Mr. Seebohm's work. We have no hesitation in repeating that, since the days of Macgillivray, no such original descriptions of the life-history of European birds have been published in any country. Nor can we feel that this praise is exaggerated, for while the descriptions of the habits of birds in Dresser's "Birds of Europe" and other popular works are obviously compiled from the writings of serious field-naturalists like Naumann and Macgillivray, those of Mr. Seebohm are based upon his personal observation, and are the result of his many ornithological expeditions in widely distant parts of the Palæarctic Region. The specimens collected by him during his travels, the nests and eggs which he gathered—in some instances still the only ones in any museum,—and the notes which he made on the habits of so many European birds, furnished him with original material which has not been exceeded by any writer of the present day. We have, therefore, not scrupled to draw upon Mr. Seebohm's published writings during the preparation of the present work, for we have found his "History of British Birds" and Mr. Saunders' "Manual" both indispensable to us, in our attempt to give a condensed idea of the Avi-fauna of the British Islands. Mr. Harting's "Handbook" and Colonel Irby's useful "Key-list" of British Birds have both been frequently consulted by us.

The volumes on "British Birds" in the original edition of the "Naturalist's Library" were admirably written by Jardine himself, and, even up to the present day, command a steady sale in England and America. It became, therefore, doubly difficult for us to determine the form in which we should write the volumes for the new edition, in face of the many exhaustive works which had preceded it. Remembering first, however, the convenient size in which the publishers proposed to issue the new edition of the "Naturalist's Library," we came to the conclusion that the most useful way in which the volumes could be issued would be as a "Hand-book"; and in this unpretentious form we have prepared the work. In these volumes on British Birds we trust that the student will find a useful guide, which shall give him some idea of the characters, colour, geographical distribution, nests and eggs of the birds of his native country. This has been our special care and pleasure to endeavour to provide, while a few notes, limited by the extent of the volumes, are given on the habits of the different species.

In the course of study, engendered by the efforts detailed above, we have come to the conclusion that there is much useful work still to be done with regard to our native birds, in various directions, some of which we may particularise as follows:—

1. The study of the moulting of birds, the way in which the young gain the plumage of the adult, and the method of change from summer to winter plumage, &c.

2. A record of the distribution of birds throughout the British Islands. This is a very important subject, and one which offers a fertile field of observation to any enthusiastic young ornithologist. A model can be found in Fatio and Studer's "Catalogue des Oiseaux de la Suisse"; and so many useful books and lists of the birds of various districts of Great Britain have been published during recent years, that it ought now to be possible to gather together the threads and publish a useful volume on the geographical distribution of our native birds.

3. The migration of birds in Great Britain. Much has been done during the past few years to improve our knowledge of

this phenomenon, but the material is still rough and undigested, and many of the conclusions published are conjectural.

4. The formation of local collections by the Museums of the capital towns of each county, which shall serve to illustrate its Avi-fauna, and explain the distribution of every bird within its limits.

It would thus be possible to obtain an ornithological census of the British Avi-fauna, a work which is much needed in the present day.

One word with regard to the nomenclature of the present volume. We have employed such names as we believe will ultimately be found to be the correct ones for the species, when an International Congress of Ornithologists determines to settle what shall be the proper scientific designations of European birds. At present there is considerable confusion in the nomenclature of our British species, the names of the "List" published by the British Ornithologists' Union being by no means acceptable to some of us at the present day, and differing in many instances from those employed by American and German Naturalists. Then again, Mr. Seebohm employs the simple method of adopting the name most in vogue since the time of Linnæus, or, as he calls it, *auctorum plurimorum*. He is also an advocate of trinomials—such as *Parus ater britannicus* for the English Coal-Tit,—an arrangement we shall never adopt, as we consider it a clumsy and unnecessary method of nomenclature, and one that in the hands of unscrupulous writers may be employed *ad lib.* to gain a little temporary notoriety, and end in making the study of birds impossible. Can any science bear the weight of such a system of nomenclature as would burden it with names like *Caryocatactes caryocatactes brachyrhyncha ! ! ?*

Then as regards the changing of *specific* names of birds. On this subject we hold strong opinions, which we know are not shared by many of our colleagues. We contend that when Linnæus, or any other of the Fathers, gave a name to a bird, no power on earth should be allowed to change it, by taking their specific name and making it the title of a genus. The Linnean name, when perfectly capable of identification, as it generally is, should be held sacred, even when the result is the duplication of the specific name, as with the Linnet, the *Fringilla cannabina* of Linnæus, and the Goldfinch, the *Fringilla carduelis* of Linnæus. In process of time both these species have been separated (and rightly) from the genus *Fringilla*, and the earliest generic names turn out to be *Cannabina* of Boie, and *Carduelis* of Brisson. Hence the names *Carduelis carduelis* (L.) and *Cannabina cannabina* (L.). Nor is this system of nomenclature without one great advantage, viz., that in nearly every case the duplicated name descends upon the typical species of the genus, which becomes at once recognisable by such duplication of the generic and specific names.

Lastly, there is one other matter to which we would direct the earnest attention of our brother ornithologists. It is a question that can best be settled by a general conclave of ornithologists, which should not be longer delayed; and this is the question of the alteration of *generic* names, about the priority of which there can be little or no uncertainty. We allude to some of the names brought to light by the diligent research of our colleague Dr. Stějneger in America; such, for instance, as the adoption of *Plectrophenax* instead of *Plectrophanes* for the Snow-Buntings, and the name *Ægithalus* instead of *Acredula* for the Long-tailed Tits. It is much better to face these changes fairly and squarely, and by their adoption, if they are found to be correct, to introduce an uniform system of nomenclature on both sides of the globe.

In a work of the present size, published at a price which it is hoped will place it within the reach of every student, it has been found impossible to figure every species. The plates have all been coloured from specimens in the British Museum, and several pictures by Mr. Keulemans have been added to illustrate certain representative species of British Birds, while others will be given in the succeeding volumes.

Our especial thanks are due to the Council of the Royal College of Surgeons for permission to use the woodcuts from their "Osteological" Catalogue; to Mr. Howard Saunders for the kindly help he has rendered during the progress of the volume through the press; and to Mr. Robert Read, who was good enough to send us some original notes on nests and eggs, which unfortunately reached us too late to be included in their entirety.

R. BOWDLER SHARPE.

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BRITISH BIRDS.

PERCHING BIRDS—ORDER PASSERIFORMES.

To this order belong the bulk of the known species of birds in the world The characters which distinguish Passerine or Perching Birds from the rest of the Class "Aves" are principally anatomical, and the chief ones consist of the "ægithognathous" palate and the "Passerine" arrangement of the deep plantar tendons of the foot.

The palate is said to be "ægithognathous," or "Passerine," when the *vomer* is broadened and blunt, or truncated, at the anterior end, and is not connected with the *maxillo-palatines*, which, consequently, are widely separated from each other. This arrangement is well shown in the skull of the Rook, one of our largest Passerine birds.

The deep plantar tendons of the Passeres are of the simplest kind, the three front toes being served by the *flexor perforans digitorum*, while the *flexor longus hallucis* serves the hallux or hind toe only.

There are many other characters which can be adduced for the distinguishing of the Passeriformes, but the two above mentioned are the most important. The order is divided into four great sections, viz., A, Oscines, or Singing Passeres; B, Oligomyodæ, or Non-singing Passeres; C, Tracheophonæ, or South American Passeres; D, Atrichornithes, Australian Scrub-birds.

Of these only Oscines are represented in the Palæarctic Region, of which Great Britain forms part, and it is with the representatives of this Section that we have to deal in the present volume.

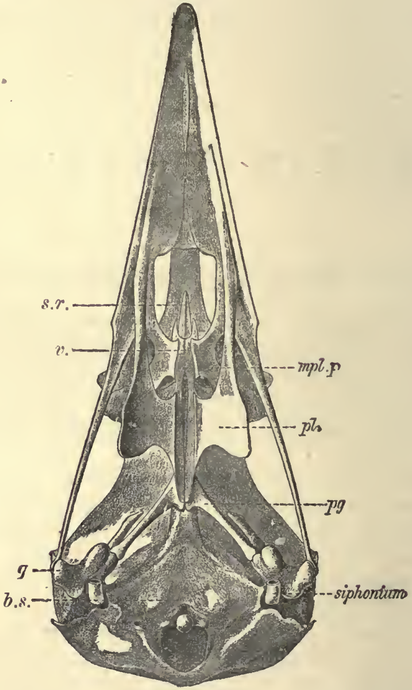


FIG. 1.—Ventral aspect of skull of Rook to show the ægithognathous palate and bony siphonium : *v.* vomer ; *mpl.-p.* maxillo-palatine process ; *pl.* palatine ; *pg.* pterygoid ; *q.* quadrate ; *b.s.* basi-sphenoid ; *s. r.* sphenoidal rostrum. (From the Catalogue of Osteological Specimens in the Museum of the Royal College of Surgeons.)

SINGING BIRDS. SECTION A.—OSCINES.

THE CROWS. FAMILY CORVIDÆ.

AMONG the members of this family will be found some of the most perfect, if one may use such an expression, of all the Passeriformes. The structure of a Raven or a Crow presents as complete an equipment as one can imagine a bird to require—a powerful bill, with well-developed nasal plumes—

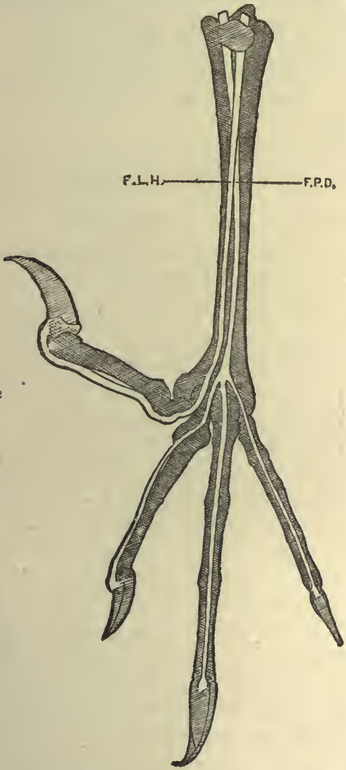


FIG. 2

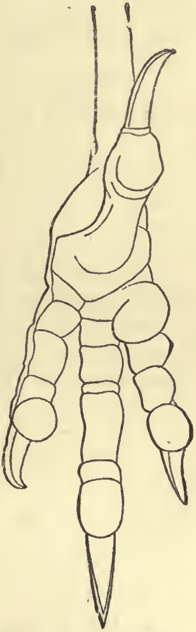


FIG. 3

FIG. 2.—Foot of Rook, dissected so as to show the arrangement of the deep plantar tendons:—F.L.H. *flexor longus hallucis*; F.P.D. *flexor perforans digitorum*. (From the Catalogue of Osteological Specimens in the Museum of the Royal College of Surgeons.)

FIG. 3.—Plantar surfaces of foot of Rook, to show the proportions of the toes in a typical Passerine bird. (*From the same.*)

a compact and regular plumage—strong wings and tail, with every series of wing-covert beautifully patterned—and, lastly, powerful feet and claws, with every scale distinctly indicated. The Crows, therefore, have a right to be placed at the head of the Oscines, in preference to the Thrushes, which excel them only in singing, beauty of voice being a feature to which the Crows can lay no claim. It should be added that nearly all the Crows are "Ambulatores" or "Walkers," that is to say, they do not hop. Many of them throw up pellets after the manner of the Owls.

THE TRUE CROWS. SUB-FAMILY CORVINÆ.

THE ROOKS. GENUS TRYPANOCORAX.

Trypanocorax, Sundev. Av. Meth. Tent., p. 43 (1872).
Type, *T. frugilegus* (Linn.).

Distinguished from all the other *Corvidæ* by having the forehead and sides of face bare, and covered with a white scabrous skin. This is peculiar to the adult birds only, and is found in both male and female. The bill is more slender and lengthened than in any other of the British Crows.

There are only two species of true Rook in the world, one being the Common Rook of Europe, which extends eastwards as far as Central Asia, and the other the Chinese Rook (*Trypanocorax pastinator*), which takes its place in Eastern Siberia, Japan, and China.

THE ROOK. TRYPANOCORAX FRUGILEGUS.

Corvus frugilegus, Linn., S. N., i., p. 156 (1766); Macg., Br. B., i., p. 535; Seeb., Hist. Brit. B., i., p. 549, pl. 16, fig. 6; Dresser, B. Eur., iv., p. 551, pl. 264; Newt. ed. Yarr. Br. B., i., p. 289; Saunders, Man. Br. B., p. 237.

Trypanocorax frugilegus (L.), Sharpe, Cat. B. Brit. Mus., iii., p. 9 (1877).

Adult Male.—Black, with a gloss of rich purple on the head and neck; sides of face greenish; wing-coverts like the back; wings and tail black, with a green or purple gloss; under surface of body black, with a purple gloss, the throat with a steel-blue gloss; bill and feet black; iris dark brown. Total length, 17 inches; bill, 2·25; wing, 12·4; tail, 7·5; tarsus, 2·2.

Adult Female.—Similar in colour to the male, but slightly smaller. Total length, 16 inches; culmen, 2·2; wing, 12·2; tail, 7·4; tarsus, 2·2.

Young.—Much duller in colour than the adult birds and much less glossy, and distinguished at a glance by the feathered face and nostrils, the latter being quite concealed by bristles.

It can readily be understood that the young Rook, with its feathered face and feather-covered nostrils, may be mistaken for a Carrion Crow (*Corone corone*). The difference in size and shape of the bill is not easily appreciated unless the two birds can be compared together, but there is luckily a character by which a Rook at all ages may be distinguished from a Carrion Crow at all ages. On lifting the body feathers of the Rook, it will be found that the bases of the latter are *grey*, whereas the Carrion Crow has *white* bases to the feathers. Considerable discussion has taken place as to the method by which the Rook gains its bare face. It is certain that the young birds retain their feathered face after their first moult, and carry it through their first winter; and, though most Rooks seem to acquire their bare face by the ensuing spring, Mr. Service has sent some specimens to the British Museum, in which the face is only partially bared, though the birds were killed in May and had bred. The question has arisen as to whether the birds wear off these feathers of the face by contact with the hard earth in which they seek for food, or whether these feathers of the face drop off naturally, leaving the face bare. There can be little doubt that the latter is the case, and many Rooks killed during the winter season have their faces half bare of feathers, the white scabrous skin becoming apparent as the plumes fall off.

Range in Great Britain.—Nearly universally distributed, but not yet recorded as breeding in Shetland or the Outer Hebrides. The Rook is to a certain extent migratory, and for a week together vast numbers may be seen flocking into England by the east coast, coming apparently from Scandinavia and other parts of Northern Europe, in company with Hooded Crows, Jackdaws, and Starlings.

Range outside the British Islands.—Generally distributed and nesting throughout the greater part of Northern and Central Europe, extending eastwards in Siberia to the valley of the Irtisch river, and nesting in Turkestan. It breeds throughout the greater part of France, locally in Northern Italy, and the Danubian provinces, as well as in Southern Russia. In the Mediterranean countries it is principally known as a winter visitor, and probably the birds which breed in Central Asia are those which find their way to North-western India and Persia in winter. The northern range of the Rook extends to the Arctic Circle in Scandinavia, but only to about 64° N. lat. in Russia and Western Siberia; its eastern range being limited by the 70th meridian of longitude.

Habits.—The Rook is a gregarious bird, being always found in flocks, both in winter and during the nesting-season; therein again differing from the Carrion Crow, which is always seen in pairs. It is practically an omnivorous bird, devouring flesh, fruit, and garbage, neither disdaining to scavenge on the sea-shore, or to harry an orchard. It will devour a number of walnuts when they have reached a good size and are almost ripe for picking, and in dry seasons, when other food-supplies fail, the Rook will undoubtedly feed on young birds, and also pilfer the eggs of birds which build in the open, such as Wheatears, Pipits, and Larks. On the other hand the amount of good done by the Rooks in the destruction of wire-worms and other noxious grubs is incalculable, and the bird, like the Starling, is a veritable friend to the farmer. In Scotland, where it is supposed to do some injury to young birds, the Rook is regarded with no more favour than it is in Holland, though it doubtless often suffers for the misdeeds of the Hooded Crow.

Rooks are decidedly capricious in their choice of a nesting-place, but when once a rookery is established, it is seldom that the locality is deserted, and the birds will return year after year in spite of persecution. Thus some three years ago, in the town of Leiden, the Rooks took up their abode in the trees which line the principal streets, and came back the next year in spite of the previous destruction of their nests. On their return, however, the inhabitants objected to the noise and litter of the birds, and a man was employed by the municipality to shoot them down, though one would have fancied that the constant firing of a gun in a public thoroughfare would prove a greater nuisance than the "cawing" of the birds themselves.

Nest.—A stout and compact structure composed of turf and twigs, the inside consisting of roots and straws, and the whole nest being not unlike a huge Blackbird's; it is by no means untidy, and is much more neatly finished than could be believed from the ragged appearance which the nests present in a rookery, when viewed from below.

Eggs.—Three to five in number, the ground-colour being green or bluish green, sometimes nearly white. The markings consist of spots and blotches of greenish brown, with darker spots of bluer or blackish brown. Axis, 1·4–1·65; diam., 1·1–1·2.

THE RAVENS. GENUS CORVUS.

Corvus, Linn., Syst. Nat., i., p. 155 (1766).

Type. *C. corax* (Linn.).

The nostrils always hidden by bristly feathers. Bill very stout and equal in length to the head. First primary quill long, equalling, or even exceeding, the innermost secondaries in length.

The Ravens are spread over the greater part of the Northern Regions of both hemispheres, *i.e.*, the Palæarctic and Nearctic Regions. They are birds which vary much in size, and many ornithologists believe in several races of the common Raven; but, after the examination of a large series of specimens in the British Museum, we cannot allow that more than one form of *Corvus corax* exists, the most recognisable of the races being the Thibetan Raven (*Corvus thibetanus* of Hodgson), which has longer hackles on the throat. A desert form, *Corvus umbrinus*, inhabits Egypt and Syria, and extends to Persia, Afghanistan, and North-western India, while a third Raven (*C. tingitanus*) inhabits Morocco and the Canary Islands. Australia possesses one species of true Raven, and Africa has two.

THE RAVEN. CORVUS CORAX.

(*Plate I.*)

Corvus corax, Linn., S. N., i., p. 155 (1766); Macg., Br. B., i., p. 498; Newt. ed. Yarr. Br. B., ii., p. 259; Sharpe, Cat. B. Brit. Mus., iii., p. 14; Dresser, B. Eur., iv., p. 567, pl. 265; Seeb., Br. B., ii., p. 532, pl. 16, figs. 1, 3; Saunders, Man., p. 233; Lilford, Col. Fig. Br. B., pt. x. (1889).

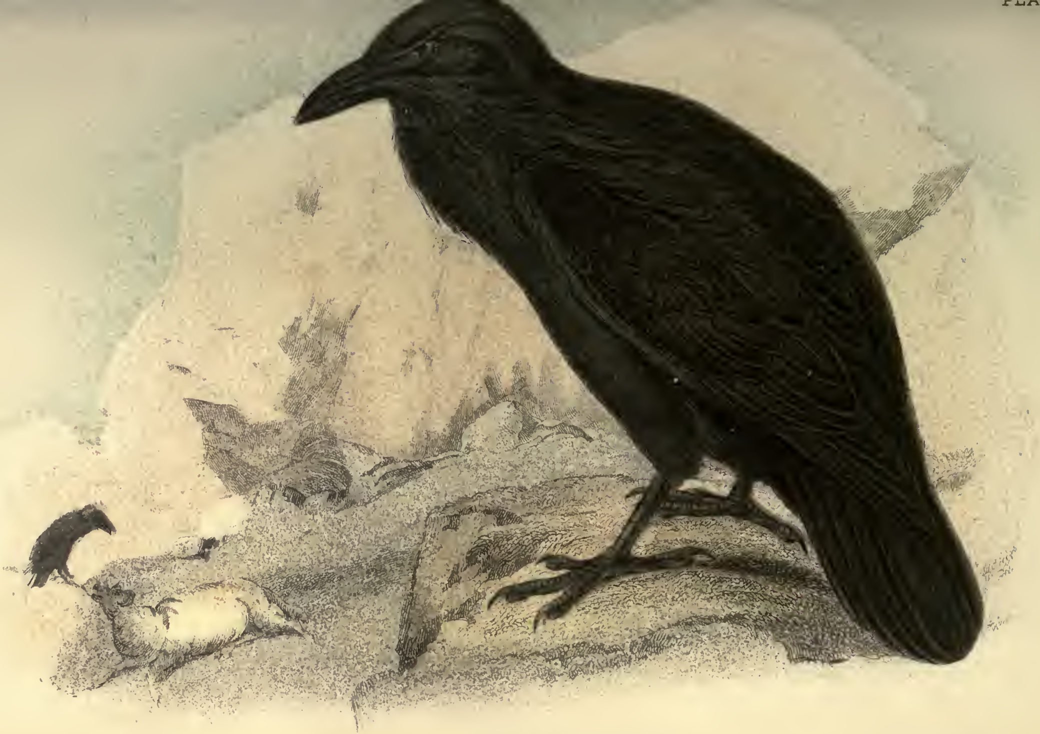
Adult Male.—Of large size. Plumage black, with purplish gloss, greenish on the wings and tail; on the fore-neck some long lanceolate feathers, forming throat-hackles; bill and legs black; iris brown. Total length, 24 inches; bill from front, 3·15; wing, 17·5; tail, 10·5; tarsus, 2·85.

Adult Female.—Similar to the male in plumage, and not inferior in size.

Range in Great Britain.—Local, and diminishing in numbers. A few pairs are still to be found in the southern counties, but it is only in the wilder parts of the north and west that the Raven now occurs regularly.

Range outside the British Islands.—Throughout the whole of the northern portions of the Old and New Worlds, in America from the high north to Mexico and Guatemala, and in the Old World to the North Mediterranean countries. Further east it reaches to the line of the Himalayas, and is found in North-western India, and extends through Central Asia and Siberia.

Habits.—Owing to continued persecution, the Raven is becoming rarer year by year throughout the British Islands. Its large size and undoubted power render it a formidable enemy to farmers, and although, like all members of the *Corvidæ*, the Raven is an omnivorous feeder, it is well known as a slaughterer of lambs, fawns, and poultry, whenever it gets the chance; but on the other hand it destroys numbers of rats and other vermin, and it also clears up carrion. In other countries, where it is not so persecuted, the bird is much tamer, and Mr. Howard Saunders says that in Majorca he has seen a pair of Ravens following the plough



RAVEN.

just like Rooks, while in the wilder parts of Central Asia the bird is a regular camp-follower.

Nest.—This is a huge and bulky structure, placed in a lofty tree or on a cliff. When unmolested the bird occupies the same nest year after year, merely repairing or adding somewhat to the structure, which consists of a mass of sticks and heather, with a dense lining of sheep's wool or something equally soft. The Raven breeds very early in the year, and the eggs are laid by the end of February or the beginning of March.

Eggs—These are scarcely so large as might be expected from the size of the bird, and often do not greatly exceed those of the Carrion Crow in size. The clutch varies from three to six in number, and the ground colour is bluish or greyish green, thickly blotched and overlaid with brown. The ground-colour is sometimes pale greenish blue, and in such eggs the markings are fewer and more distinct. Axis, 1·85–2·1 inches; diam., 1·25–1·4 inch. (Plate XXIX., Fig. 2.)

THE JACKDAWS. GENUS COLŒUS.

Colœus, Kaup., Skizz., Natürl. Syst., p. 114 (1829).
Type, *C. monedula* (Linn.).

The members of this genus resemble the Ravens in the form of the wing, having a long first primary, which equals or exceeds the innermost secondaries in length. In general form, however, the Jackdaws are different from the last-mentioned birds, having a very short bill, which is not even as long as the head itself. They also generally build in holes of trees, or in buildings, under shelter.

Five species of Jackdaw are known, one of them, the so-called "Fish-Crow," being found in North America, while the other four are peculiar to the Old World. Of these, our common Jackdaw is found throughout the greater part of Europe, while from Turkey eastwards to Central Asia its place is taken by the White-collared Jackdaw (*Colœus collaris*), and still further, in China and Japan, it is replaced by the Chinese Jackdaw (*Colœus neglectus*). In Eastern Siberia, China, and Japan occurs still another form, the White-collared Jackdaw (*Colœus dauricus*).

THE JACKDAW. COLŒUS MONEDULA.

Corvus monedula, Linn., S. N., i., p. 156 (1766); Macg., Br. B., i., p. 552 (1837); Dresser, B. Eur., iv., p. 523, pl. 261 (1875); Newt. ed. Yarr., ii., p. 305 (1878); B. O. U. List Br. B., p. 68 (1883); Seeb., Hist Br. B., i., p. 556 (1883); Saunders, Man., p. 229 (1889); Lilford, Col. Fig. Br. B., pt. x. (1889).

Colœus monedula, Sharpe, Cat. B. Brit. Mus., iii., p. 26 (1877).

Adult Male.—Black, with a purplish gloss on the wings and tail, somewhat shot with green; crown of head glossy blue-black, forming a cap by reason of the greyish shade which pervades the hind neck and sides of neck, the latter part inclining occasionally to hoary white; bill and feet black; iris bluish white. Total length, 13 inches; culmen, 1·35; wing, 9·5; tail, 6·1; tarsus, 1·7.

Adult Female.—Similar to the male in colour and size.

Young.—Duller than the adult, and not showing any grey on the neck.

Range in Great Britain.—Generally distributed, but is somewhat local, and there are many localities where it does not breed, such as the Outer Hebrides and the Shetlands, though a few pairs nest in the Orkneys. There is a great migration of these birds every autumn from the east, and large numbers cross to England in October and November, in company with Rooks. Even earlier in the year there seems to be a migration along the south coast, as we have seen numbers at St. Leonards, in Sussex, passing from east to west in September; but whether these were British-bred birds shifting their quarters or whether they were the forerunners of the great swarm which visits us every year from Northern Europe and passes over Heligoland, it is impossible to say.

Range outside the British Islands.—Throughout nearly the whole of Europe, breeding as far north as Trondhjemsfiord, and being found generally south of the Arctic Circle. Seebohm and Harvie Brown found the Jackdaw common in Russia at Mezen (lat. 66°), noticed it at Ust Zylma (lat. 65°), and in the Urals it is known to occur up to 61°. Its range is evidently further north in Scandinavia than in Siberia, where it reaches to the Valley of the Yenesei, Seebohm having noticed it at Krasnoyarsk (lat. 56°). In many parts of Southern Europe the Jackdaw is local, but it occurs in the countries north of the Mediterranean and in Algeria. It has not been found in Egypt, and in South-eastern Europe is replaced by *Colœus collaris*, which takes its place to the eastward.

Habits.—The Jackdaw is decidedly a gregarious bird like the Rook, with which it is a close companion, especially in winter, migrating in flocks along with that species. Even in the breeding season many pairs nest in company, and we have known as many as ten nests in a single old tree. Cathedral and University towns are favourite haunts of the Jackdaw, which finds its favourite nesting-places in the old towers and churches. In many places, however, the bird builds in holes of cliffs and in rabbit-burrows, and not unfrequently in the open. We have ourselves seen a Jackdaw's nest on the ledge of a window-sill of an outhouse.

Nest.—The nest is an untidy structure, by no means equal to that of the Rook as a piece of architecture, and is composed of sticks, moss and grass, with a few feathers occasionally added.

Eggs.—From three to six in number, bluish green or bluish white, with obscure grey spots and bolder spots and markings of brown or greenish brown, distributed pretty equally over the whole egg. Axis, 1·35–1·55 inch; diam., 0·9–1·1 inch.

In dry seasons, when food is difficult to obtain, the number of eggs is often only three, and many young birds perish in the nest.

THE CROWS. GENUS CORONE.

Corone, Kaup, Skizz., Natürl Syst., p. 99 (1829).

Type, *C. corone* (Linn.).

The Crows are Ravens in miniature, and differ only in the form of the wing, the first primary quill being longer than the ordinary secondaries, but not equal to the innermost secondaries in length. They are found in the northern portions of both Hemispheres, ranging into Mexico in the New World, and occurring over the greater part of the Old World, except in

Africa below the Sahara, *i.e.* the Ethiopian region proper. Only one Crow is found in the Pacific Islands, viz., *Corone hawaiensis* of the Sandwich Islands: otherwise the Crows are not represented in Oceania.

The genus *Corone* may be divided into two main groups, the Hooded, or Saddle-backed Crows, and the True Crows. Of the former group there are five species with grey necks, or mantles, while all the rest of the species, some fifteen in number, are entirely black. Of the grey-necked section our Hooded Crow is the most familiar species. It is found over the greater part of Europe, and in Western Siberia is represented by a very similar species, *Corone sharpii*, which winters in North-western India. In Persia and Mesopotamia a third species occurs (*C. capellanus*). Of the True Crows, we have but one species in Europe, the Carrion Crow, but this is represented in the Indian and Australian Regions by many forms, so like one another that only a prolonged study can result in a proper understanding of the species.

THE HOODED CROW. CORONE CORNIX.

Corvus cornix, Linn., S. N., i., p. 156 (1766); Macg., Br. B., i., p. 529 (1837); Dresser, B. Eur., iv., p. 543, pl. 263, fig. 2 (1874); Newt. ed. Yarr., ii., p. 275 (1878); B. O. U. List Br. B., p. 69 (1883); Seeb., Hist. Br. B., i., p. 544 (1883); Saunders, Man., p. 235 (1889); Lilford, Col. Fig. Br. B., pt. xi. (1889).

Corone cornix, Sharpe, Cat. B. Brit. Mus., iii., p. 31 (1877).

Adult Male.—Above drab-grey; head, wings, and tail purplish black, with green reflections; sides of neck and under surface of body drab-grey; bill and legs black; iris dark brown. Total length, 17 inches; culmen, 2·4; wing, 12·5; tail, 7·8; tarsus, 2·2.

Sexes alike in colour.

Young.—Duller in colour than the adult, the grey dusky, and the black dull without glossy reflections; the lanceolate plumes on the throat not developed.

The grey back of the Hooded Crow and its grey breast render it easily recognisable from all its brethren, and these features are easily seen when the bird is flying. It is of the same size and shape as the Carrion Crow, and many ornithologists deny to it the rank of a species, because it often interbreeds with the last-named bird. This seems to us a mistaken idea, as there are many places where the Carrion and Hooded Crows breed perfectly true, and it is only in certain places and colonies that the two birds hybridise. We have ourselves come across such mixed colonies in Aberdeenshire, but there are also many places in the United Kingdom where Hooded Crows pair and rear their young. When hybridism takes place the young birds partake of the ground-colour of the Hooded Crow, but have the grey plumage smudged and streaked with black to a greater or less extent. In Siberia the interbreeding of the Carrion Crow and the eastern form of Hooded Crow (*C. sharpii*) takes place, and has been well described by Mr. Seebohm, whose specimens illustrative of the fact are to be seen in the Great Hall of the Natural History Museum at South Kensington.

Range in Great Britain.—Chiefly known as an autumn emigrant, when great numbers arrive on the east coast and distribute themselves inland. For a week together flocks of Hooded Crows are constantly arriving, and in Heligoland we have seen them continually for five days and nights, a flock being constantly in sight, either arriving or departing. In Ireland, Scotland, and some parts of England and Wales, the Hooded Crow breeds regularly, sometimes pairing with a Carrion Crow, as already mentioned.

Range outside the British Islands.—The Hooded Crow has a curious distribution, and may almost be said to exist in scattered colonies throughout Europe, being in some districts plentiful, absent in others; in some localities a winter visitant only, in others a resident; in many places interbreeding with the Carrion Crow, as already mentioned. The great stronghold of the species is probably European Russia, whence migrate the large flocks which populate Western Europe in winter, but in many other parts of Central Europe, in Italy, Sicily, and Egypt, the Hooded Crow is a resident bird, though always local. The exact ranges of the European species and that of its eastern representative (*C. sharpii*) are not yet determined, and we only know of the latter that it breeds in Central Siberia, and winters in North-western India, so that its migrating line is probably north and south, whereas the migration of *C. cornix* is east and west.

Habits.—The ways of the Hooded, or "Danish" Crow, as it is often called by the marshmen, are best observed in England on the east coast after the season of migration, when the bird is plentiful in the marshes and on the shores. The favourite food of the Hooded Crow seems then to consist of cockles. When the bird finds a difficulty in opening one of the latter, it flies up into the air and lets the mollusc fall upon a rock or hard ground, so as to break the shell. In Scotland and parts of the United Kingdom where this Crow is resident, it enjoys, with the Carrion Crow, the hatred of every gamekeeper for the damage it does to the eggs of game-birds, which it devours wholesale, and we have ourselves seen the ground under a Hooded Crow's nest strewn with the egg-shells of Grouse. It is quite as destructive a bird as the Carrion Crow, if not more so.

Nest.—This is a solid structure, and is placed on a tree or rock, being often built on cliffs. It is of the usual Corvine type, being largely composed of twigs, and branches, coarse roots, moss, and wool, with a few feathers.

Eggs.—From three to six in number, green or greenish blue, generally clouded with brown spots and mottlings and overlaid with larger mottlings of greenish brown. Sometimes, even in the same clutch, will occur eggs of a nearly uniform greenish blue, with the markings nearly obsolete. Axis, 1·55–1·8; diam., 1·25–1·15 inch.

THE CARRION CROW. CORONE CORONE.

Corvus corone, Linn., S. N., i., p. 155 (1766); Macg., Br. B., i., p. 516 (1837); Dresser, B. Eur., iv., p. 531, pl. 263, fig. 1 (1875); Newt. ed. Yarr., ii., p. 274 (1878); B. O. U. List Br. B., p. 69 (1883); Seeb., Hist. Br. B., i., p. 539 (1883); Saunders, Man., p. 233 (1889); Lilford, Col. Fig. Br. B., pt. x. (1889).

Corone corone, Sharpe, Cat. B. Brit. Mus., iii., p. 36 (1877).

Adult Male.—Steel-black above and below, with a purplish shade; on the head and neck a green gloss; throat-feathers purplish, and lanceolate in shape; bill and legs black; iris brown. Total length, 19 inches; culmen, 2·15; wing, 13·0; tail, 8·0; tarsus, 2·5.

Sexes alike.

Young.—Similar to the adult, but the whole plumage more dingy in colour.

Range in Great Britain.—Generally distributed, but more plentiful in some parts than in others, especially in the north and west. Rare in Ireland and generally replaced by the Hooded Crow. A considerable migration to the east coast occurs in autumn.

Range outside the British Islands.—Generally but locally distributed over Europe, but not occurring far north, while it is an inhabitant only of the more northern parts of the Mediterranean countries. Many naturalists recognise the Carrion Crow of Eastern Siberia as a distinct species (*Corone orientalis*), and it is probably this species which interbreeds with the Siberian Hooded Crow (*Corone sharpii*) in the valley of the Yenisei, as recorded by Mr. Seebohm (Br. B., i., p. 547). Like the Raven, which it much resembles in appearance and habits, the Carrion Crow is an omnivorous bird, and it will prey upon anything that comes in its way, young birds, sickly lambs, eggs of game-birds, rodents of all sizes, garbage, sea-shells, etc. Occasionally the Crows assemble in flocks like Rooks, and, like the latter, atone for their misdeeds by devouring insects and grubs.

Nest.—Generally built in a tall and isolated tree, about the middle of April, but sometimes in rocks, and when these suitable situations do not occur, the nest will be placed on the ground. In structure it resembles that of the Hooded Crow.

Eggs.—Three to six in number, very similar in size and colour to those of the Hooded Crow, but the bluish ground-colour generally rather brighter. As with the eggs of *C. cornix*, there are many varieties in which the spots are sparsely distributed, and in some instances the mottlings show a tendency to crowd together at the larger end of the egg. Axis, 1·6–1·9 inch; diam, 1·1–1·25.

THE NUTCRACKERS. GENUS NUCIFRAGA.

Nucifraga, Briss., Orn., ii., p. 58 (1760).

Type, *N. caryocatactes* (Linn.).

The Nutcrackers differ in structure from the Rooks, the Ravens, and the Crows in the proportions of the wing-feathers, the first primary quill being very short, and not equal to the secondaries in length. The bill is very thin, conical, and long, resembling that of the Rook in shape, but of course having the nostrils always covered with bristles. The wing is somewhat rounded, the innermost secondary quills being gradually shorter than the outer ones.

Four species of Nutcrackers are now recognised, one, *N. columbiana*, being confined to the New World, and three to the Old. Of these, *N. caryocatactes* occasionally visits Great Britain, the other two, *N. hemispila* and *N. multipunctata*, being inhabitants of the Himalayan sub-region.

THE NUTCRACKER. NUCIFRAGA CARYOCATACTES.

Corvus caryocatactes, Linn., S. N., i., p. 157 (1766); Lilford, Col. Fig. Brit. B., pt. iv. (1887).

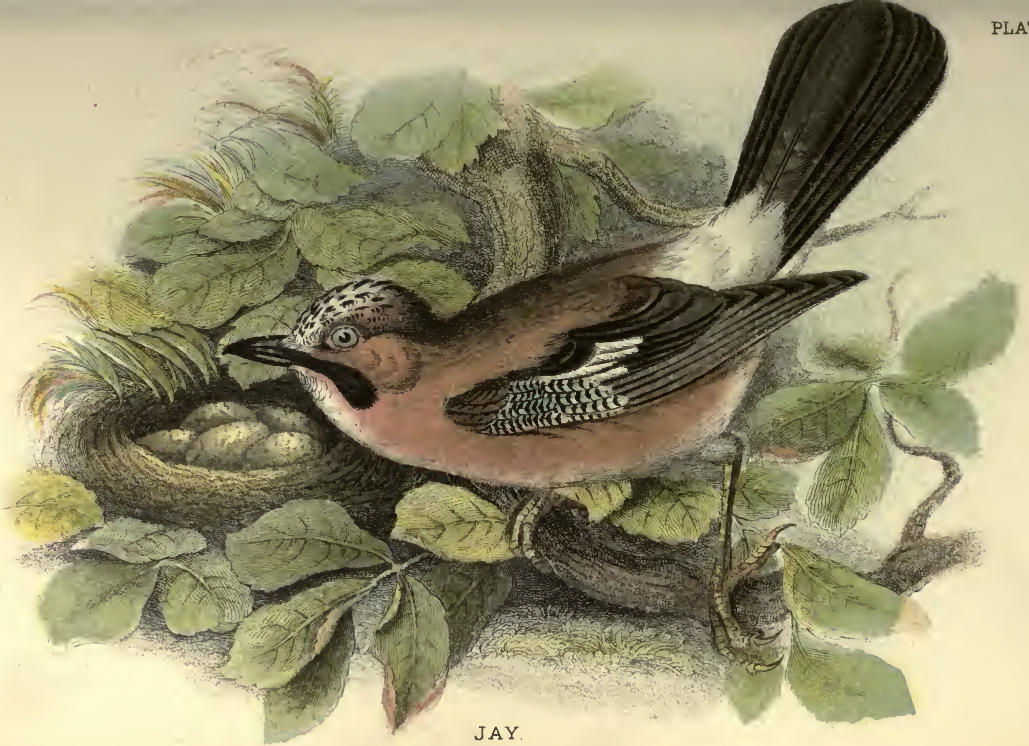
Nucifraga caryocatactes, Macg., Br. B., i., p. 583 (1837); Dresser, B. Eur., iv., p. 451, pl. 252 (1874); Sharpe, Cat. B. Brit. Mus., iii., p. 53 (1877); Newt. ed. Yarr., ii., p. 330 (1878); B. O. U. List Br. B., p. 67 (1883); Seeb., Hist. Br. B., i., p. 583 (1883); Saunders, Man., p. 223 (1889).

Adult Male.—Back brown, with a triangular white spot on each feather; head dark brown; outer tail-feather white at tip, the basal half black; central primaries with a large patch of white near the base of the inner web; rump and upper tail-coverts brown, uniform; bill and feet black; iris dark brown. Total length, 13 inches; culmen, 1·95; wing, 7·3; tail, 5·2; tarsus, 1·1.

Sexes alike in colour.

Young.—Duller in colour than the adult and browner, the feathers generally more fluffy; wing-coverts tipped with dull white; under tail-coverts dingy white.

Two forms of Nutcracker in Europe are recognised by



JAY.

many naturalists, *N. caryocatactes*, and a short-billed form, *N. brachyrhynchus*, the supposed differences between which we have never been able to appreciate.

Range in Great Britain.—An irregular visitor. Sometimes, as in the case of the Waxwing and Pallas' Sand Grouse, a westward immigration occasionally takes place in Europe, but not many instances of the capture of this bird in England have been recorded.

Range outside the British Islands.—An inhabitant of the conifer-forests of Europe and Siberia, breeding very early in March, though in Siberia, according to Mr. Seebohm, it does not nest before the middle of June. It is found as high as 67° N. lat. in Sweden, and its range extends across Siberia to Kamtchatka and Japan. To the southward it has been found breeding in the pine-forests of Transylvania, Switzerland, and France, and it probably nests in the Pyrenees and some of the mountain-ranges of Northern Spain.

Habits.—Mr. Seebohm states that, like most of the other European *Corvidæ*, the Nutcracker is almost omnivorous, and will devour eggs and nestlings of other birds. It also extracts seeds from the conifer-trees, and devours wasps and other insects. A very interesting account of the same author's experiences of the birds in Siberia is given by him in his "History of British Birds" (vol. i., p. 584).

Nest.—Somewhat bulky and ragged, composed of twigs of larch and spruce firs, and lined with dry grasses.

Eggs.—Three to five in number, the ground-colour nearly white, with numerous tiny spots of pale brown, sometimes a little larger towards the larger end. Axis, 1·4–1·55 inch; diam., 0·95–1·0.

THE MAGPIES. GENUS PICA.

Pica, Briss., Orn., ii., p. 35 (1766).
Type, *P. pica* (Linn.).

Five species of Magpie are known, one being our common British Magpie, which is found over the greater part of Europe and Asia, and also inhabits North America. In Central Asia the White-winged Magpie (*P. leucoptera*) takes its place, and in the Eastern Himalayas a black-rumped form occurs (*P. bottanensis*), while in South-eastern Spain an intermediate form is found, and further in Algeria and Morocco *P. mauritanica* replaces the ordinary European species. In California is found the Yellow-billed Magpie (*P. nuttalli*).

THE MAGPIE. PICA PICA.

Corvus pica, Linn., S. N., i., p. 157 (1766).
Pica melanoleuca, Macg., Br. B., i., p. 562 (1837).
Pica rustica, Dresser, B. Eur., iv., p. 509, pl. 260, fig. 2 (1873); Newt. ed. Yarr., ii., p. 312 (1878); B. O. U. List Br. B., p. 68 (1883); Saunders, Man., p. 227 (1889).
Pica caudata, Seeb., Hist. Br. B., i., p. 562 (1883); Lilford, Col. Fig. Brit. B., pt. xii. (1890).
Pica pica, Sharpe, Cat. B. Brit. Mus., iii., p. 62 (1877).

Adult Male.—Black, with green and coppery reflections; rump with an ashy-white bar; a white shoulder-patch; tail dark green, black at the end, before which the feathers are coppery, and then purplish red to purplish blue; throat black, with grey streaks; rest of under surface pure white; thighs and under wing-coverts black, with a green shade; bill and legs black; iris brown. Total length, 16 inches; culmen, 1·5; wing, 7·9; tail, 9·8; tarsus, 1·95.

Sexes alike, the female being merely a little duller in colour.

Young.—Like the adults, but much more dingily coloured.

Range in Great Britain.—Generally distributed throughout the British Islands, though absent in some parts of Scotland, and the outlying islands. In many parts of the southern and south-eastern counties of England now of rare occurrence.

Range outside the British Islands.—Generally distributed throughout Europe and Northern Asia to China, and also occurring over the greater part of North America.

Habits.—A woodland species, still plentiful in some of the midland counties, but regarded with great enmity by the farmer and gamekeeper. As regards its food, it is practically omnivorous, devouring fruit and grain, small mammals and dead birds, eggs and young of poultry and game; but also useful from the number of insects and grubs it destroys. Generally seen in pairs, but also assembles on occasions in considerable flocks, as many as forty having been seen together. Its flight is much more laboured than those of the other *Corvidæ*, and is accomplished by rapid flappings of the wings. Owing to the persecution which follows it in England, the Magpie is a very shy bird, but in other countries it is comparatively tame, and frequents the neighbourhood of dwellings, building in bushes and even under the eaves of houses.

Nest.—Constructed of twigs, with a foundation of mud and clay, and generally, but not always, domed. The nest is lined with fine rootlets, and is so constructed with thorny sticks as to be difficult of access.

Eggs.—Four to seven in number. Ground-colour pale greenish or greenish blue, generally plentifully mottled and spotted with brown and greenish brown, with grey underlying spots and blotches. Considerable variation takes places in the eggs of the Magpie, both as regards colour and size, the spots often clustering at the end of the egg and forming a brown patch, while occasionally they are almost entirely devoid of markings. Axis, 1·25–1·75 inch; diam., 0·95–1·0. (Plate XXIX., Fig. 7.)

THE JAYS. GENUS GARRULUS.

Garrulus, Briss., Orn., ii., p. 46 (1760).

Type, *G. glandarius* (Linn.).

The Jays, like the Magpies, belong to the short-winged group of Crows, and are very strongly represented in both the Old and the New World. They are of brighter colours than the ordinary Crows, some of the American Blue Jays being of beautiful plumage and possessing ornamental crests. The Jays of the Old World, though not so brilliant in coloration, are remarkable for a spangled blue wing-patch, which is a well-known feature of our British Jay.

There are two groups of Jays, the white or vinous-throated birds, and the black-throated ones. To the latter section belong *Garrulus lanceolatus* of the Himalayas, and *G. lidthi* of Japan or Corea. Of the pale-throated section, there are some with striped heads like our British Jay, some with black heads like the Jays of Algeria, Asia Minor, and the Caucasus, and some with uniform vinous-coloured heads, the latter being confined to the Himalayas, China and Formosa.

THE COMMON JAY. GARRULUS GLANDARIUS.

(*Plate II.*)

Corvus glandarius, Linn., S. N., i., p. 156 (1766).

Garralus glandarius, Macg., Br. B., i., p. 576 (1837); Dresser, B. Eur., iv., p. 481, pl. 254 (1873); Sharpe, Cat. B. Brit. Mus., iii., p. 93 (1877); Newt. ed. Yarr., ii., p. 323 (1878); Seeb., Hist. Br. B., i., p. 569 (1883); B. O. U. List Br. B., p. 67 (1883); Saunders, Man., p. 225 (1889); Lilford, Col. Fig. Brit. B., pt. x. (1889).

Adult Male.—General colour vinaceous; throat white; under surface pale vinaceous; vent and under tail-coverts white; crown of head streaked with black; forehead whitish with black streaks; bastard-wing and primary coverts barred with black and cobalt-blue; bill black. Total length, 13 inches; culmen, 1·15; wings, 7·3; tail, 6·6; tarsus, 1·7.

Sexes alike.

Young.—Duller in plumage than the adults, and the feathers more fluffy in texture.

Range in Great Britain.—Apparently diminishing in numbers, owing to systematic persecution on account of its depredations in game preserves, the Jay is still to be found in woodland districts, and is common in some places. In Ireland it is now only found in the south and east, but appears to be spreading northward in Scotland, occurring as far as Inverness-shire. Occasionally large numbers migrate to our shores, and they have been observed by Mr. Gätke to pass over Heligoland in some seasons in vast quantities.

Range outside the British Islands.—Throughout the greater part of Europe, but replaced in North-eastern Africa by an allied form (*Garrulus minor*), and in South-eastern Europe and Siberia by other species. Its highest northern range in Russia is, according to Mr. Seebohm, about lat. 63°, whence it extends to the valley of the Volga. In Scandinavia it occurs up to the Arctic Circle.

Habits.—The Jay is an extremely shy and wary bird, having no doubt learnt caution from the state of danger in which it constantly finds itself, not only on account of its depredations in the covert, but because of the brilliant blue feathers in the bird's wing, which are much in request with fly-fishers. It is more often seen than heard, and its harsh note is the only indication of the bird's presence. Its name of *glandarius*, the bird of the acorn, has been amply justified during the past summer (1893), when we have noticed in many of the woods in the midland and eastern counties a considerable number of Jays gathered together to feed on the acorns which have been so unusually abundant. Although in the spring the Jay devours a large number of grubs, it is decidedly a mischievous bird later on in the fruit season, and will commit great havoc among peas in a garden, if the latter be near a wood inhabited by the birds. It is detested by the gamekeeper as a devourer of eggs and young birds, and at certain seasons of the year it is as omnivorous as any of its Corvine relations. When on the ground, it does not walk like the other *Corvidæ*, but hops like the majority of Passerine birds.

Nest.—A cup-shaped structure adapted to its surroundings, placed on a branch of a bush or tree, sometimes at a considerable height from the ground. Composed of twigs and roots, and lined with finer rootlets.

Eggs.—Three to six; axis, 1·2–1·4; diam., 0·9; colour varying from grey or clay-colour to olive brown, in the latter case almost devoid of markings; but the ordinary type of egg is thickly clouded with minute spots of pale brown, sometimes forming a ring at one end or the other. (Plate XXX., Fig. 5.)

THE CHOUGHS. SUB-FAMILY FREGILINÆ.

The Choughs constitute a small section of the Crows. They belong exclusively to the Old World, and differ from the true *Corvidæ* in the position of the nostrils, which are situated low down in the bill, nearer to the lower edge of the mandible than to the upper. Two genera are found in Europe and Northern Asia, and a third form (*Corcorax*) inhabits Australia.

THE TRUE CHOUGHS. GENUS GRACULUS.

Graculus, Koch, Syst. Baier, Zool., p. 91 (1816).
Type, *G. graculus* (Linn.).

The following species is the only representative of this genus:—

THE RED-BILLED CHOUGH. GRACULUS GRACULUS.

Corvus graculus, Linn., S. N., i., p. 158 (1766).
Fregilus graculus, Macg., Br. B., i., p. 587 (1837).
Pyrrhocorax graculus, Dresser, B. Eur., iv., p. 437, pl. 251, fig. 1 (1875); Newt. ed., Yarr., ii., p. 252 (1878); B. O. U. List Br. B., p. 66 (1883); Seeb., Hist. Br. B., i., p. 578 (1883); Saunders, Man., p. 221 (1889); Lilford, Col. Fig. Br. B., pt. x. (1889).
Graculus graculus, Sharpe, Cat. B. Brit. Mus., iii., p. 146 (1877).

Adult Male.—Purplish black; greenish on the wings and tail; *bill deep vermilion; legs vermilion;* iris brown. Total length, 15 inches; culmen, 2·1; wing, 12·0; tail, 8·7; tarsus, 2·3.

Sexes alike in plumage.

Young.—Dusky black, without the gloss of the adults; bill and legs orange-yellow.

Range in the British Islands.—Now restricted to certain localities in the South-western counties of England, parts of Wales, the Isle of Man, but still by no means rare in some localities in Ireland. It also occurs in some of the Western Islands of Scotland as far north as Skye. Its habitat is now almost entirely restricted to the sea-coast, but it was formerly found inland, as it is now on the Continent of Europe and the mountains of Asia, and the Himalayas. Occurs in the Channel Islands.

Range outside the British Islands.—An inhabitant of the cliffs and mountains, the Chough is found distributed over the countries on both sides of the Mediterranean, in Portugal, and Western France, but it does not range far to the north on the Continent of Europe, its limit being given by Mr. Seebohm as lat. 58°. It extends throughout the mountainous parts of Europe to Central Asia and Persia, as far as North-eastern China, while in the Himalayas a slightly larger race occurs.

Nest.—Generally placed in holes in cliffs or in caves, and always difficult to visit. It is made of sticks and stems of heather, and is lined with wool and hair.

Eggs.—Three to six in number, creamy white in colour, with grey underlying marks and brown spots, varying considerably in the extent and character of the latter. Axis, 1·5 inch; diam., 1·1.

THE ALPINE CHOUGHS. GENUS PYRRHOCORAX.

Pyrrhocorax, Vieill., N. Dict., vi., p. 568 (1816).

Type, *P. pyrrhocorax* (Linn.).

Only one species of the genus is known, differing from the true Choughs in its shorter bill, and in having the base of the cheeks bare, not feathered as in the genus *Graculus*.

THE ALPINE CHOUGH. PYRRHOCORAX PYRRHOCORAX.

Corvus pyrrhocorax, Linn., S. N., i., p. 158 (1766).
Pyrrhocorax alpinus, Dresser, B. Eur., iv., p. 445, pl. 251, fig. 2 (1875); Sharpe, Cat. B. Brit. Mus., iii., p. 148 (1877); Seeb., Hist. Br. B., i., p. 580, note (1883); Saunders, Man., p. 222 (1889).

Only one specimen has ever been captured in England, as recorded and figured by Messrs. Aplin, in their "Birds of Oxfordshire." It may very probably have been an imported individual that had escaped. The range of the Alpine Chough outside the British Islands is very similar to that of the foregoing species, and it apparently extends as far east. The yellow bill will always serve to distinguish it from the Red-billed Chough.

THE STARLINGS. FAMILY STURNIDÆ.

The Starlings, like the Crows, are "Ambulatores," or "Walkers," progressing over the ground by a walking step, instead of by hops, like the Thrushes, Sparrows, and most "Passerine" birds. Though possessing a perfection of form little inferior to that of the *Corvidæ* as regards the wings and feet, the Starlings are very different in the shape of their bill and swollen nostril, and also in the form of the wing, which is very much pointed and possesses only nine primary quills. All the true Starlings nest in holes, and lay eggs of a bluish white or pale blue colour, without spots.

THE TYPICAL STARLINGS. GENUS STURNUS.

Sturnus, Linn., Syst. Nat., i., p. 291 (1766).

Type, *S. vulgaris* Linn.

Starlings, of the same type as our familiar English bird, are about ten in number, and are all confined to the Old World. Of these no less than six are found in India, two being resident, and the other four winter visitants from their more northern breeding-places. *Sturnus unicolor* belongs to the Mediterranean sub-region, *S. caucasicus* and *S. purpurascens* to the Mediterraneo-Persic sub-region, and *S. poltoratzkii* to the Mongolian sub-region.

The typical species of the genus is *Sturnus vulgaris* of Linnæus, from Sweden, and this bird is widely spread over Europe, but in Siberia it is replaced by a purple-headed race, *S. menzbieri*, which winters in India, and between those two forms an intermediate form, which I think ought to be separated from both and called by a separate name. It occurs in different parts of Europe, and even visits England, especially the eastern counties.

THE COMMON STARLING. STURNUS VULGARIS.

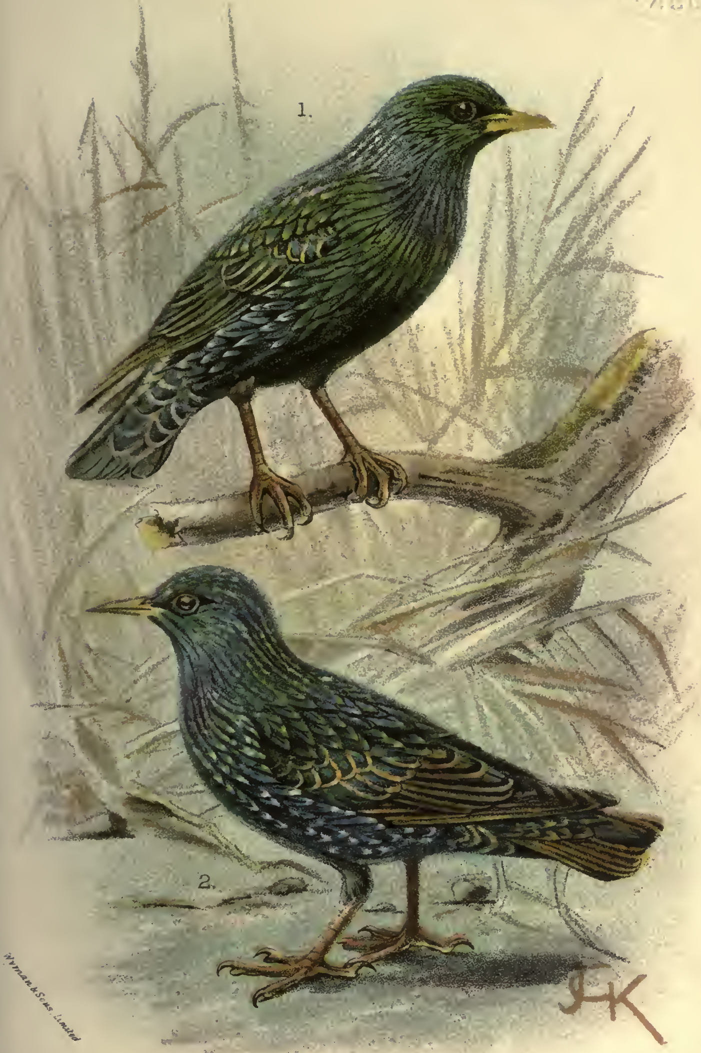
(*Plate III., Fig. 1.*)

Sturnus vulgaris, Linn., S. N., i., p. 290 (1766); Dresser, B. Eur., iv., p. 405, pl. 247 (1874); Newt. ed. Yarr., ii., p. 228 (1877); B. O. U. List Br. B., p. 65 (1883); Saunders Man., p. 217 (1889); Sharpe, Cat. B. Brit. Mus., xiii., p. 27 (1890); Lilford, Col. Fig. Br. B., pt. xxii. (1892).
Sturnus guttatus, Macg., Br. B., i., p. 595 (1837).

Adult Male.—Black, with reflections of green and purple and violet; the mantle bronzy purple; head, sides of face, and ear-coverts green; sides of body and flanks bluish purple, the

BAILLIE'S INSTITUTION GLASGOW

PLATE III.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1 COMMON STARLING 2. INTERMEDIATE STARLING.

latter inclining to steel-blue and steel-green; wings variegated, the quills black, with a spot of ashy grey just before the ends of the inner primaries and secondaries, the secondary quills with a steel-blue or green line just before the tip; bill yellow; feet reddish brown; iris light brown. Total length, 8 inches; culmen, 1·0; wing, 5·0; tail, 2·4; tarsus, 1·1.

Adult in Winter Plumage.—Similar to the summer plumage, but entirely obscured by sandy buff tips to the feathers, so that the colour, especially on the throat, can be traced only with difficulty. The bill is brownish black at this season of the year.

The female resembles the male in colour, but the gloss of the plumage is never so brilliant. The sandy buff tips to the feathers, which are lost in the male by being abraded and worn off, never entirely disappear in the female, and are still to be seen to a greater or less extent in the breeding bird.

Young.—Entirely different from the adults, being almost uniform brown or dove-colour, the breast and abdomen white, streaked with brown.

The intermediate form of Starling between our common birds and the Siberian Starling (*S. menzbieri*) is figured on the plate (Pl. III., Fig. 2), and differs from the typical bird in having the head and throat washed with purple, but the ear-coverts *green*. In *S. menzbieri* the head, throat, and ear-coverts are all purple.

Range in Great Britain.—Almost universally distributed, and of late years becoming common in parts of Scotland, where it was formerly rare or unknown. Nor is this to be wondered at, as the autumnal migration to our shores is enormous, and for days together flocks of migrants pour into our eastern coasts.

Range outside the British Islands.—Found everywhere in summer throughout Europe, but only occurring as a winter visitor in the countries of the Mediterranean. Its eastern range extends as far as Egypt and Persia in winter, but in Central Siberia it is replaced by *Sturnus menzbieri*. The range of the intermediate form, if the latter be a true species, is not yet determined.

Habits.—The Starling is gregarious in the winter season, and is generally to be found in the society of Rooks, with which it associates in large flocks. During the nesting season it is more familiar, and frequents dwellings and farmyards, where it nests under roofs and in chimneys, or in holes of buildings or trees. It does an incalculable amount of good in the destruction of grubs and noxious insects, but it devours a quantity of fruit during the period of the year when the cherries are in season, at which time its good deeds as a grub-destroyer are apt to be forgotten.

Nest.—A rough structure of straw and grass, with a few feathers and wool for lining.

Eggs.—From four to seven. Pale blue or bluish white. Axis, 1·15–1·35 inch; diam., 0·8–0·85 inch.

THE FIELD STARLINGS. GENUS PASTOR.

Pastor, Temm., Man. d'Orn., i., p. 83 (1815).

Type, *P. roseus* (Linn.).

In the "Rose-coloured Pastor," as this bird is sometimes called, the bill is of different shape to that of the true Starlings, being shorter, higher, and more curved. Only one species of the genus is known, and this is an unfrequent visitor to the British Islands. In addition to its brilliant plumage, the Pastor has an enormous crest.

THE ROSE-COLOURED STARLING. PASTOR ROSEUS.

(*Plate IV.*)

Turdus roseus, Linn., S. N., i., p. 294 (1766).

Pastor roseus, Dresser, B. Eur., iv., p. 423, pl. 250 (1873); Newt. ed. Yarr., ii., p. 243 (1877); B. O. U. List Br. B., p. 66 (1883); Seeb., Hist. Br. B., ii., p. 20 (1884); Lilford, Col. Fig. Br. B., pt. vii. (1888); Saunders, Man., p. 219 (1889); Sharpe, Cat. B. Br. Mus., xiii., p. 63 (1890).

Adult Male in Breeding Plumage.—Clear rose-colour, with black wings and tail shot with green or purple. Total length, 8 inches; culmen, 0·8; wing, 5·1; tail, 2·5; tarsus, 1·25.

Sexes alike; the female not quite so bright in colour, and with a shorter crest.

Young.—Different from the adults. Brown, with darker brown wings and tail; cheeks, chin, and upper throat white; under surface very pale brown, the flanks mottled with darker brown.

In **winter** the plumage of the old birds is not so brilliant, the whole of the feathers being obscured by sandy-coloured edges and tips, which wear off and become abraded as the spring approaches.

Range in Great Britain.—An accidental visitor from the south-east.

Range outside the British Islands.—Very common in winter in the plains of India, staying in that country very late in the season (we ourselves saw a flock of some ten individuals in brilliant summer plumage near Futtehpur Sikri on the 3rd of July), but they disappear suddenly, and are back again with their young early in August. During their short absence from their winter quarters they visit Central Asia, and come to Asia Minor and South-eastern Europe to nest, as well as Bulgaria, the Dobrudscha, and the vicinity of Smyrna at irregular intervals, often following the locusts. They have even been known to breed in large numbers as far west as Verona. An interesting account of the nesting of this species will be found in Mr. Seebohm's "History of British Birds" (*l.c.*).

Habits.—In most respects resembling our common Starling, but differing in their mode of nesting, when they are gregarious, and build their nests in holes of buildings or rocks.

Eggs.—Five to seven, nearly white or pale grey. Axis, 1·1–1·2 inch; diam., 0·8–0·9.

THE ORIOLES. FAMILY ORIOLIDÆ.

The Orioles are birds generally of a bright black and yellow plumage, or black and crimson. They are entirely confined to the Old World, the so-called "Orioles" of America belonging to a totally different family of birds, viz., the *Icteridæ*. They differ from the Crows not only in their brilliant coloration, but in having a notch in the upper mandible, such as is found in Thrushes and many other Passerine birds. Their mode of nesting is also very peculiar, the nest being suspended in the fork of a branch.

THE GOLDEN ORIOLES. GENUS ORIOLUS.

Oriolus, Linn., Syst. Nat., i., p. 160 (1766).

Type, *O. galbula* (Linn.).

THE GOLDEN ORIOLE. ORIOLUS GALBULA.

(*Plate V.*)

Oriolus galbula, Linn., S. N., i., p. 160 (1766); Dresser, B. Eur., iii., p. 365 (1875); Newt. ed. Yarr., i., p. 233 (1877); Sharpe, Cat. B. Brit. Mus., iii., 191 (1877); B. O. U. List Br. B., p. 36 (1883); Seeb., Hist. Br. B., i., p. 589 (1883); Saunders, Man., p. 137 (1889); Lilford, Col. Fig. Br. B., pt. ix. (1888).

Adult Male.—Golden yellow; wings black, with a yellow speculum caused by the tips of the primary coverts; the secondaries edged towards the tips with yellowish white; tail black, the feathers tipped with yellow, increasing towards the outermost one, which is yellow with a black base; bill dull red; feet leaden grey; iris blood-red. Total length, 9 inches; culmen, 1·0; wing, 5·9; tail, 3·1; tarsus, 0·8.

Adult Female and Young Birds.—Similar to the male above, but below greyish white, streaked with black on the throat and breast. The statement that the old female is entirely yellow and black like the male has not yet been fully confirmed.

Range in Great Britain.—Rare visitor to most parts of England and Ireland, and seldom found in Scotland, but a regular migrant to Cornwall and the Scilly Islands in spring.

Range outside the British Islands.—Breeds throughout Europe and below the Baltic, extending to Lat. 63° in South Finland and in Russia to 60° N. Lat. east to Russian Turkestan and the Altai Mountains. Its place in Central Asia is taken by the Indian Oriole (*O. kundoo*), a species very like *O. galbula*, but having the black coral spot extended beyond the eye. The furthest south-eastern range with which we are ourselves acquainted is Fao, in the Persian Gulf, whence specimens have been sent to the British Museum by Mr. W. D. Cumming. The winter home of the species seems to be Southern and South-western Africa,—viz., Natal, the Transvaal and Damara Land.

Habits.—Very much like those of a Thrush. In disposition the bird is very shy and by no means so easily observed as its brilliant plumage would lead one to suppose, though it is often found nesting in parks and gardens of continental towns. Its food consists mostly of insects, but in summer it feeds a great deal on fruit, especially cherries. The note is described as flute-like and very beautiful in tone. Mr. Seebohm, who has taken many nests of the Oriole in Holland, says: "The call-note during the pairing season sounds like the words, 'Who are you?' in a full rapid whistle; and its song is a *wheet*, *li*, *vee-ō*, whence its vernacular name in Holland of 'Kiel-i-vee-vo.'"

Nest.—Suspended from the fork of a branch, sometimes in a fir-tree, but generally in an oak, at a considerable height from the ground. It is composed of strips of bark, which are also used to bind it to the branch in which it is fixed. The lining consists of grass-stalks.

Eggs.—Four or five, white or pinkish white, spotted nearly all over with black or chocolate brown, the latter generally being the underlying colour, the spots not unfrequently congregated at the larger end. Axis, 1·1–1·3 inch; diam., 0·8–0·9.

THE HANG-NESTS. FAMILY ICTERIDÆ.*

Three species of this American family have been allowed to swell the British List,—(1) the Red-winged Starling (*Agelæus phœniceus*), of which about a dozen occurrences have taken place; (2) the Rusty Grakle (*Scolecophagus ferrugineus*), which has been captured once; and the Meadow Starling (*Sturnella magna*), of the occurrence of which three instances are known. There can be no reasonable doubt that they were all imported birds which had escaped or been turned loose.

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* *Gracula religiosa*, an Indian Mynah, has also been recorded, but as it is a frequent cage-bird, no importance can be attached to its capture.

THE FINCHES. FAMILY FRINGILLIDÆ.

The great family of Finches is of wide distribution in both hemispheres. It is especially characteristic of the northern parts of both the Old and New Worlds, and its members possess an exceeding diversity of form, so that the characters of the family are not easily tabulated. They possess only nine primary quills, and are remarkable for their conical-shaped bill, which has gained for them the name of *Conirostres* in most systems of classification.

I have, in the "Catalogue of Birds" (vol. xii.), divided the Finches into three sub-families, as follows:—(1) Coccothraustinæ, or Grosbeaks, (2) Fringillinæ, or Finches, and (3) Emberizinæ, or Buntings.

THE GROSBEAKS. SUB-FAM. COCCOTHRAUSTINÆ.

In these Finches the bill is extremely powerful, especially in the typical forms, and in the skull the nasal bones are extended backwards beyond the anterior line of the orbit. In this sub-family are found all the Hawfinches and large Grosbeaks of Europe and Asia, but there are no representations in Africa or Australia. Both North and South America possess a large number of Grosbeaks, and some of the smaller forms, such as *Spermophila*, are characteristic of the Neotropical region.

THE GREENFINCHES. GENUS CHLORIS.

Chloris, Cuv., Leçons d'Anat. Comp., i., tab. 2 (1800).
Type, *C. chloris* (Linn.).

The Greenfinches have a very stout and conical bill, with the nostrils placed high in the mandible, so that they are situated nearer to the culmen than to the cutting edge of the bill. The secondary quills are of ordinary form and are not falcated or "bill-hook" shaped as in the Hawfinch, which is the only other British Finch which has a stoutly-built bill like the Greenfinch.

Five species of true Greenfinches are known, our English bird (*C. chloris*), which extends throughout Europe to Central

Asia, and is replaced in Syria and Palestine by a brightly-coloured race (*C. chlorotica*), while in Eastern Siberia, China, and Japan occurs the Chinese Greenfinch (*C. sinica*), the two remaining species *C. kawarahiba* and *C. kittlitzi* being peculiar to Japan and the Bonin Islands respectively.

THE GREENFINCH. CHLORIS CHLORIS.

Loxia chloris, Linn., S. N., i., p. 304 (1766).
Linaria chloris, Macg., Br. B., i., p. 365 (1837).
Coccothraustes chloris, Newt. ed. Yarr., ii., p. 105 (1876).
Ligurinus chloris, Dresser, B. Eur., iii., p. 567, pl. 174 (1875); B. O. U. List Br. B., p. 49 (1883); Saunders, Man., p. 161 (1889).
Chloris chloris, Sharpe, Cat. B. Brit. Mus., xii., p. 21 (1888).
Fringilla chloris, Lilford, Col. Fig. Br. B., pt. xiv. (1890).

Adult Male.—Above olive-yellow, shaded with ashy grey, especially on the head; ear-coverts ashy; cheeks and under surface of body bright yellow, slightly washed with ashy; forehead and eyebrows brighter yellow; lower abdomen white; quills dusky brown, *with yellow outer webs to the primaries, reaching to the shaft*, and grey margins and tips to the secondaries; bastard wing bright yellow; tail-feathers yellow at base, blackish at the ends; bill fleshy pink; feet pale brown; iris hazel. Total length, 6 inches; culmen, 0·55; wing, 3·35; tail, 2·25; tarsus, 0·7.

Adult Female.—Duller in colour than the male, and always to be distinguished by the primaries being merely *edged* with yellow at the base, while the tail is not yellow at the base, and the feathers of the bastard wing also show no yellow base.

Young.—Browner than the adults, and having dusky brown streaks on the throat, breast, and flanks.

In **winter** the plumage of the adult birds is always overlaid with brown tips to the feathers, and it is by the wearing off of these tips that the Greenfinch attains its bright summer dress.

Range in Great Britain.—Found nearly everywhere if trees or bushes are present, and apparently extending its range northward, as it now breeds sparingly in the Orkneys, though to these islands and the Shetlands it is chiefly a winter visitor from the Continent. A large migration takes place to the east coast in autumn, and on the south coast there is also a regular migration every spring and autumn. Birds caught on passage at these seasons are brighter in colour than the resident British birds, which are, as in many other instances, more dingy than their continental representatives.

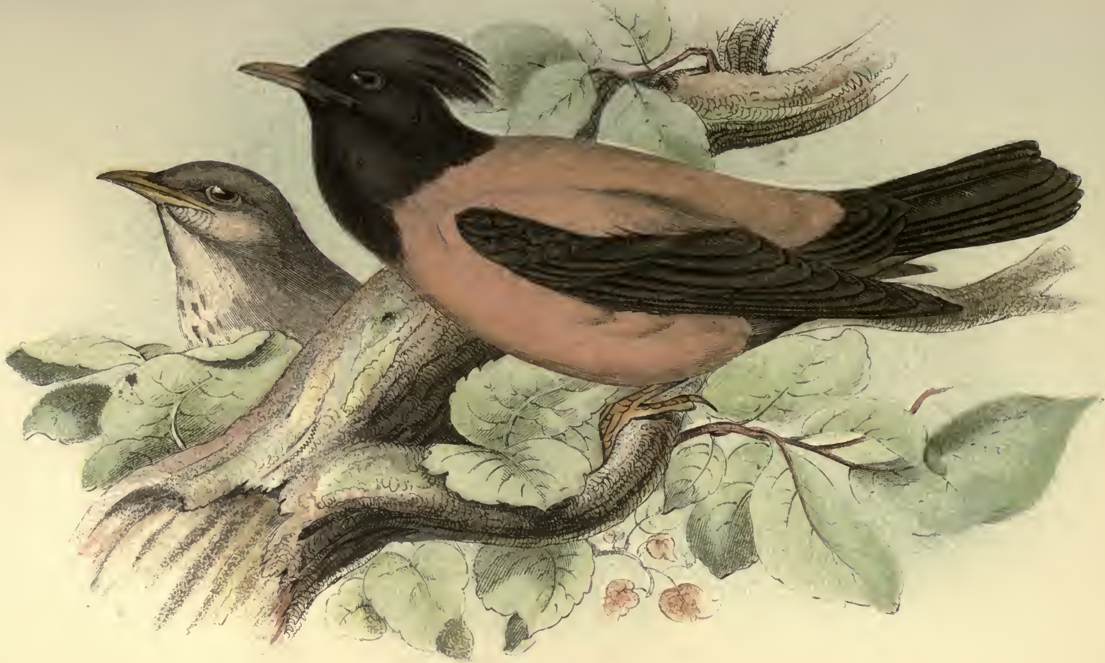
Range outside the British Islands.—Throughout the whole of Europe, up to 65° N. lat. in Scandinavia and to 60° in the Ural Mountains. Its breeding range extends to about long. 70°, and it is found as far as North-western Persia and North-west Turkestan. In the southern portion of its range the Greenfinch is a much smaller and more brilliantly coloured bird than in the north, and has been recognised as a species (*C. aurantiiventris*) by some writers.

Habits.—In summer the Greenfinch is somewhat shy, but in winter it is found in flocks in the fields and farmyards along with Sparrows and Chaffinches. The song of the Greenfinch is generally described as poor, but we have more than once heard a male, during the nesting season, giving forth a song not much inferior to that of a Canary. Its general food consists of seeds and grain, but it also devours quantities of insects, especially when bringing up its young, which are largely fed upon caterpillars.

Nest.—Most commonly to be found in shrubberies and evergreen trees, but not unfrequently found in woods far from any habitation, and occasionally in unexpected situations, as in a hollow at the top of a gate-post. Several nests have been found in close proximity to each other. The nest is rather a carelessly built structure, composed of moss with a few twigs and rootlets, the lining consisting of horse-hair and a few feathers.

Eggs.—Four to six. They vary very much in size and markings. The ground-colour is white or bluish white, and the spots are pinkish, generally at the larger end, with larger outlying blackish spots or small blotches, with occasionally a linear streak of the same colour. Axis, 0·75–0·9; diam., 0·55–0·6 inch. Small eggs of the Greenfinch are often difficult to distinguish from those of the common Linnet.

PLATE IV.



ROSE COLOURED STARLING

BAILLIE'S INSTITUTION GLASGOW

THE HAWFINCHES. GENUS COCCOTHRAUSTES.

Coccothraustes, Briss., Orn., iii., p. 218 (1760).

Type, *C. coccothraustes* (Linn.).

The Hawfinches are easily distinguished from all the other Finches in the world by the peculiar form of their secondary quills, which are shaped like a bill-hook. They are among the largest of the family, and far exceed all other British Finches in size and in the massiveness of their bill.

Three species of true Hawfinch are known, one (*C. coccothraustes*) believed to be peculiar to Europe, another (*C. japonicus*) to Eastern Siberia, Japan, and Northern China, while the third (*C. humii*) is only known from the extreme north-west of the Punjab, but may be found to range into Afghanistan and perhaps into Central Asia.

THE HAWFINCH. COCCOTHRAUSTES COCCOTHRAUSTES.

(*Plate VI.*)

Loxia coccothraustes, Linn., S. N., i., p. 299 (1766).
Coccothraustes atrogularis, Macg., Br. B., i., p. 356 (1837).
Coccothraustes vulgaris, Dresser, B. Eur., iii., p. 575, pl. 175 (1875); Newt. ed. Yarr., ii., p. 98 (1876); B. O. U. List Br. B., p. 50 (1883); Saunders, Man., p. 163 (1889); Lilford, Col. Fig. Br. B., pt. xvi. (1890).
Coccothraustes coccothraustes, Sharpe, Cat. B. Brit. Mus., xii., p. 36 (1888).

Adult Male.—Chocolate-brown above, pale vinous brown below; head cinnamon-brown; sides of neck and hind neck bluish grey; lower back, rump, and upper tail-coverts cinnamon-brown, as also the inner greater coverts; wings black, glossed with purple or steel-blue; primaries with a large patch of white about the middle of the inner web; a line of black on the forehead, and throat, black; lower abdomen and under wing-and tail-coverts, white; tail blackish brown, tipped with white, the centre feathers like the back; bill leaden blue, the lower mandible flesh-colour at base; feet greyish brown; iris white or greyish white. Total length, 7 inches; culmen, 0·8; wing, 4·2; tail, 2·15, tarsus; 0·85.

In **winter** the colour of the plumage is as in summer, but the whole of the bill is fleshy white.

Adult Female.—Differs from the male in being duller coloured, the head being ashy brown, becoming chocolate-brown on the hinder crown; forehead and sides of face dull ochre-brown; under surface of body ochreous brown. Total length, 6·7; culmen, 0·75; wing, 3·9; tail, 2·1; tarsus, 0·75.

Young.—Chocolate-brown above, the crown olive-yellow with dusky tips to the feathers; throat pale yellow; under surface light brown with dusky tips to the feathers.

Range in Great Britain.—Locally distributed, but increasing in numbers, and by no means rare in the vicinity of London, while in some of the southern counties it may be called even plentiful. In Scotland and Ireland it is an irregular visitor.

Range outside the British Islands.—Generally distributed over Europe and breeding also in Algeria, extending eastward to Asia Minor and the Caucasus, and even to Turkestan.

Habits.—The Hawfinch is a very shy bird, and even where it is known to nest it is not easy of observation. Its food consists largely of berries, seeds, and the kernels of stone-fruit, which it is able to crush with its strong bill, rejecting the fruit itself, and eating only the kernel. In this way Hawfinches do some damage to plum-trees, and they also devour a quantity of peas from the gardens. The young birds are especially fond of the last-named food.

Nest.—Composed of twigs and roots with a little lichen added, the outside of the nest having a considerable fringe of outstanding twigs, as in the nest of the Bullfinch. The lining consists of fine roots and hair.

Eggs.—Four to six. Ground of eggs stone-colour, with scribbling marks and spots of grey or blackish brown, the grey being the underlying tint; occasionally the markings are almost obliterated. In some specimens the ground-colour of the egg is yellowish or creamy stone-colour. Axis, 0·8–1·1 inch; diam., 0·65–0·75. (Plate XXIX., Fig. 8.)

THE TRUE FINCHES. SUB-FAMILY II. FRINGILLINÆ.

Of this Sub-family, which contains the bulk of the birds ordinarily known as "Finches," our Common Chaffinch may be taken as the type. The bill is strong, and always more or less stoutly built, but does not exhibit the robustness of that of the Grosbeaks. The nasal bones are not produced backwards beyond the base of the cranium, but on looking at the skull it will be seen that the angle of the chin is slightly out of line with the lower mandible of the bill. In the Grosbeaks the line is continuous, and in the Buntings the angle is extremely well marked, so that the Finches hold an intermediate position between the Grosbeaks and the Buntings.

The distribution of the true Finches is very similar to that of the Grosbeaks, as they are not represented in Australia or in the Pacific Islands, but they are very plentiful in the northern portions of the Old and New World, less so in India and Africa, and again abundant in South America.

THE CHAFFINCHES. GENUS FRINGILLA.

Fringilla, Linn., Syst. Nat., i., p. 318 (1766).

Type, *F. cœlebs* Linn.

Two species of the genus *Fringilla* occur in England, and one of them, the Brambling, ranges right across Asia to Japan. In Algeria, Madeira, the Canary Islands, and the Azores, no less than six species of Chaffinch are known, most of the separate islands possessing a peculiar form of their own.

THE CHAFFINCH. FRINGILLA CŒLEBS.

Fringilla cœlebs, Linn., S. N., i., p. 318 (1766); Macg., Br. B., i., p. 329 (1837); Dresser, B. Eur., iv., p. 3, pl. 182 (1873); Newt. ed. Yarr., ii., p. 68 (1876); B. O. U. List Br. B., p. 52 (1883); Sharpe, Cat. B. Brit. Mus., xii., p. 171 (1888); Lilford, Col. Fig. Br. B., pt. viii. (1888); Saunders, Man., p. 175 (1889).

Adult Male.—Chestnut-brown; the lesser and median wing-coverts white; greater coverts black, tipped with white, forming a band across the wing; lower back and rump olive-green; centre tail-feathers ashy grey, the remainder black with a large wedge-shaped mark of white on the last feather but one, this white mark still more extended on the outer feather; crown and hind neck slaty blue; forehead black; under surface pale vinous red; lower abdomen, thighs, and under tail-coverts white; bill leaden blue; feet brown; iris hazel. Total length, 6 inches; culmen, 0·45; wing, 3·5; tail, 2·5; tarsus, 0·65.

Adult Female.—Different from the male. Above ashy brown, washed with olive-yellow; under surface of body pale ashy brown, lighter on the throat, and tinged with pink on the throat and breast. Total length, 6·5 inches; culmen 0·5; wing, 3·4; tail, 2·6; tarsus, 0·65.

Young.—Like the adult female, but more dingy; rump and upper tail-coverts olive-brown.

Range in Great Britain. — Breeding nearly everywhere, but a winter visitor only to the Shetlands. A common winter migrant on all our eastern shores.

Range outside the British Islands.—Generally distributed throughout Europe, up to the line of the Arctic Circle, and extending to 62° N. lat. in the Ural Mountains. Its western breeding range extends to about long. 70°.

Habits.—The Chaffinch is a bird familiar to most people, and is to be found in great abundance in most parts of the British Islands, particularly in winter, when it associates with Sparrows and Greenfinches in the stubbles and in the farmyards. Its familiar note, "pink, pink," is heard everywhere in the spring, and in some of our southern counties the Chaffinch is an extremely abundant species. It builds one of the most beautiful nests of any British bird, and it is so well concealed by protective resemblance to its surroundings, that in the majority of cases it would pass undiscovered but for the anxious notes of the parent bird which lead to its discovery. Like most Finches, the food consists of grain in winter, but in summer the birds feed largely on insects.

Nest.—A pretty cup-shaped structure, placed in a bush or branch of a tree, composed chiefly of moss with a few rootlets and twigs, and clothed externally with cobwebs and lichens, so as to resemble the surrounding of the branches on which it is placed. The lining consists of horse-hair, feathers, and down.

Eggs.—Four to six. Very variable in tint, ranging from bluish stone-colour to clear blue. In the former instance the markings consist of a reddish or pink wash over the eggs, which are dotted here and there with bold spots of black or reddish brown. In the blue type of egg, the underlying spots are pale violet and the upper spots and scratches are purplish or black, and are generally congregated round the larger end. Axis, 0·75–0·8; diam., 0·55–0·6.

THE BRAMBLING. FRINGILLA MONTIFRINGILLA.

(*Plate VII.*)

Fringilla montifringilla, Linn., S. N., i., p. 318 (1766); Macg., Br. B., i., p. 335 (1837); Dresser, B. Eur., iv., p. 15, pl. 184 (1871); Newt. ed. Yarr., ii., p. 75 (1876); B. O. U. List Br. B., p. 52 (1883); Sharpe, Cat. B. Brit. Mus., xii., p. 178 (1888); Saunders, Man., p. 177 (1889).

Adult Male.—Differs from the Chaffinch in the white band across the rump and in its variegated plumage. Head and mantle blue-black; flanks spotted with black; a white speculum on the wing, formed by the white base to the inner primaries; sides of face black like the crown; under surface pale orange-rufous, the abdomen white; bill bluish black; feet reddish brown; iris hazel. Total length, 6·2 inches; culmen, 0·55; wing, 3·5; tail, 2·45; tarsus, 0·75.

Adult Female.—Differs from the male in being much duller and browner in colour.

In winter, when the Brambling visits England, the colours of the adult bird are obscured by sandy-coloured margins to the feathers, which gradually wear off, leaving the feathers of the breeding plumage in their full beauty. The bill is yellow with a blackish tip.

Range in Great Britain.—A winter visitor only, arriving sometimes in enormous flocks.

Range outside the British Islands.—Europe and Northern Asia to Japan. Breeds in Scandinavia up to lat. 60°, and in

Eastern Siberia to lat. 50°. Visits Southern Europe and the Mediterranean countries in winter, and eastwards it is found in Turkestan and the North-western Himalayas, Japan, Eastern Siberia, and China.

Habits.—When the Brambling arrives in late autumn it betakes itself generally to the beech-woods, roosting in evergreen shrubs in the neighbouring woods and sometimes traversing a considerable distance to reach its roosting-place. It feeds on beech-mast and seeds of the alder, and occasionally visits farm-yards in company with Chaffinches, with which it consorts largely in the woods during the day.

The Brambling has been said to breed in the British Islands, but these records are mostly untrustworthy, though one instance of a nest being found in Scotland by Mr. E. T. Booth seems to be authentic.

Nest.—Of the same type as that of the Chaffinch, but rather larger and not so neatly finished off. "Its principal beauty," says Mr. Seebohm, "is derived from the mixture of green moss, lavender-coloured lichens, and white birch-bark, interwoven with cobwebs, thistle-down, and buff inner birch-bark; it is lined with fine grass and feathers." The nest is built in a birch or spruce fir-tree, often at a considerable height from the ground.

Eggs.—Resemble those of the Chaffinch, but the ground-colour is darker and rather more olive or stone-colour. Markings similar to those of the Chaffinch. Axis, 0·7–0·8 inch; diam., 0·55–0·6. (Plate XXXI., Fig 1.)

THE GOLDFINCHES. GENUS CARDUELIS.

Carduelis, Briss., Orn., iii., p. 53 (1760).

Type, *C. carduelis* (Linn.).

It is difficult to define the exact differences of form between the Chaffinches and the Goldfinches, but the latter are much more slender birds and have a longer and more pointed bill. By their style of plumage, however, the Goldfinches are easily recognisable, the crimson face and the golden patch on the wing making them very conspicuous. Two species of Goldfinch are known, our British bird occurring throughout the greater part of Europe to Central Siberia and Central Asia, while the grey-headed Goldfinch (*C. caniceps*) is found in the Himalayas, and extends to Eastern and Central Siberia and Central Asia. In Siberia *C. caniceps* interbreeds with the ordinary Goldfinch, or rather with the larger and whiter race which occurs in Eastern Europe and Siberia, and which has been called *C. major* by Russian naturalists.

THE GOLDFINCH. CARDUELIS CARDUELIS.

(*Plate VIII.*)

Fringilla carduelis, Linn., S. N., i., p. 318 (1766).

Carduelis elegans, Macg., Br. B., i., p. 393 (1837); Newt. ed. Yarr., ii., p. 117 (1877); Dresser, B. Eur., iii., p. 527, pl. 166 (1877); B. O. U. List Br. B., p. 47 (1883); Saunders, Man., p. 165 (1889); Lilford, Col. Fig. Br. B., pt. xv. (1890).

Carduelis carduelis, Sharpe, Cat. B. Br. Mus., xii., p. 185 (1888).

Adult Male.—Above pale chocolate-brown; greater wing-coverts golden yellow; quills black, tipped with white, the base of the primaries golden yellow, forming a conspicuous patch; crown of head and a band behind the ear-coverts black; forehead crimson; bill rosy whitish, with the tip black; feet fleshy brown; iris brown. Total length, 5·2 inches; culmen, 0·55; wing, 3·2; tail, 1·85; tarsus, 0·6.

Sexes alike in plumage.

Young.—Light brown, with no red on the face; underneath white, washed with brown on the fore-neck, breast, and sides of body, all of which are spotted with blackish.

Range in Great Britain.—Generally distributed, but now local where once it was common. In many parts of the north, and in Scotland, it is only an accidental visitor. Local in Ireland.

Range outside the British Islands.—Europe generally, occurring in Scandinavia to lat. 65° and in the Ural Mountains to lat. 60°. The exact limit between the range of our Goldfinch and of the larger Eastern race (*C. major*) has not yet been accurately determined.

Habits.—The Goldfinch is essentially a bird of the country, and has in many of the southern counties been driven away by the development of the towns and the invasion of the bird-catcher into its favourite haunts. The gradual cultivation of waste-lands, with their accompanying plenitude of thistles, has doubtless likewise had something to do with the disappearance of the Goldfinch. An old bird-catcher has told us that in his youth he once caught twelve dozen Goldfinches in a single morning, placing his nets behind a hedge which then existed on the present site of the Great Western Railway at Paddington; and we can remember when the Goldfinch was common in Berkshire, and flocks of young birds were to be found in autumn in places where a Goldfinch has probably not been seen for the last twenty years. In winter it frequents the alder-trees in company with Redpolls and Siskins, and is often to be seen on the thistles, the seeds of which form a staple article of its food. It nests in fruit-trees, and in many places in evergreen shrubs, away from habitations, but the nest is often built in the slender branches of a beech or oak tree in parks and woodlands.

Nest.—Cup-shaped and beautifully made; composed of moss and lichens distributed externally; lined with horse-hair and downy feathers.

Eggs.—Four or five in number, of the same type as those of the Greenfinch, but much smaller; ground-colour creamy blue or bluish white, with grey underlying markings, and spotted or lined with reddish brown. The markings vary greatly in strength and intensity, and some eggs are practically without spots of any kind. Axis, 0·7 inch; diam., 0·5. Mr. Seebohm points out that the eggs of the Goldfinch cannot be distinguished from those of the Serin or Siskin, and can only be told from those of the Linnet and Greenfinch by their smaller size. The lighter ground-colour distinguishes them from the eggs of the Lesser Redpoll. (Plate XXIX., Fig. 5.)

THE SISKINS. GENUS CHRYSOMITRIS.

Chrysomitris, Boie, Isis, 1822, p. 322.

Type, *C. spinus* (Linn.).

Possessing a bill of similar shape to that of the Goldfinches, attenuated and pointed, the Siskins differ from the latter birds in their style of coloration, which consists chiefly of green and yellow, the crown of the head being in most cases black.

The Siskins are found all over South and North America, throughout Europe and Northern Asia, to the Himalayas, and they occur also in North-eastern Africa, the highlands of Equatorial Africa, and reappear in the Cape Colony.

THE SISKIN. CHRYSOMITRIS SPINUS.

Fringilla spinus, Linn., S. N., i., p. 322 (1766); Lilford, Col. Fig. Br. B., pt. xiv. (1890).

Carduelis spinus, Macg., Br. B., i., p. 400 (1837); Newt. ed. Yarr., ii., p. 126 (1877).

Chrysomitris spinus, Dresser, B. Eur., iii., p. 541, pl. 169 (1876); B. O. U. List Br. B., 48 (1883); Sharpe, Cat. B. Br. Mus., xii., p. 212 (1888); Saunders, Man., p. 167 (1889).

Adult Male.—Head black; throat black; back yellowish green, with dusky shaft-streaks on the feathers of the upper surface; rump brighter yellow; flanks yellowish, streaked with black; tail-feathers yellow at base; bill dusky, livid at base; feet light brown; iris brown. Total length, 4·5 inches; culmen, 0·45; wing, 2·7; tail, 1·7; tarsus, 0·55.

Adult Female.—Differs from the male in wanting the black head; under surface white, tinged with yellow on the throat; sides of body and flanks streaked with black centres to the feathers.

Range in Great Britain.—Breeding in Scotland and in certain parts of Ireland (co. Waterford and Wicklow). Generally known as a winter visitor to England, though it is said to have nested in most of the English counties.

Range outside the British Islands.—Breeds throughout the pine districts of Europe, in Scandinavia to lat. 67°, in Russia to the vicinity of Archangel, and in the Urals to lat. 58°. Extends throughout Siberia to Japan. Winters to the southward.

Nest.—A pretty structure, cup-shaped, made of moss with a few feathers and lined with horse-hair. Mr. Seebohm says that there is generally a foundation of grass-stalks with a few heather-twigs intermixed. The nest is generally placed high up in a fir-tree, and is difficult to find.

Eggs.—Five or six in number, exactly like those of the Goldfinch in size and markings.

THE LINNETS. GENUS CANNABINA.*

Cannabina, Boie, Isis, 1828, p. 1277.

Type, *C. cannabina* (Linn.).

The bill in the present genus is shorter and stouter than in the Goldfinches and Siskins, though of the same pointed shape. The absence of yellow in their plumage is another character of the Linnets, which have most of them a red top-knot or cap, as well as some red on the breast and rump, in the nesting season at least.

THE TWITE. CANNABINA FLAVIROSTRIS.

Fringilla flavirostris, Linn., S. N., i., p. 322 (1766); Lilford, Col. Fig. Brit. B., pt. xiii. (1890).
Linaria flavirostris, Macg., Br. B., i., p. 379 (1837).
Linota flavirostris, Dresser, B. Eur., iv., p. 59, pl. 191 (1876); Newt. ed. Yarrell, ii., p. 160 (1877); B. O. U. List Br. B., p. 54 (1883).
Acanthis flavirostris, Sharpe, Cat. B. Brit. Mus., xii., p. 236 (1888); Saunders, Man., p. 185 (1889).

Adult Male.—Distinguished from the common Linnet by its dusky yellow bill. Brown above, streaked with blackish centres to the feathers; the head like the back, without any red cap; breast and abdomen white, the throat reddish brown with darker streaks; rump rosy; no red on the breast; bill yellow; feet blackish; iris brown. Total length, 5 inches; culmen, 0·35; wing, 3·0; tail, 2·3; tarsus, 0·65.

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* Dr. Sclater having shown (Ibis, 1892, p. 555) that the generic name of *Acanthis*, Bechst., which I used for the Linnets in the "Catalogue of Birds," cannot properly be employed for these birds, being in fact a synonym of *Carduelis*, the next name in order of date is *Linaria* of Vieillot (1816). This generic name, however, is pre-occupied in Botany, and so the next in order of date is *Cannabina* of Boie (1828).

Adult Female.—Similar to the male, but not having the vinous rump, this part resembling the rest of the back.

Young.—Like the old female, but with a dusky bill.

Range in Great Britain.—A northern bird, breeding throughout Scotland, and down to the Midland Counties. Breeds also in Ireland in suitable localities. In the south only known as a winter visitor.

Range outside the British Islands.—As in Great Britain, the Twite is a northern bird, and its breeding-range is confined to Western Europe, not extending beyond long. 25°; it only nesting in suitable districts in Norway. It winters to the south, but rarely reaches the Mediterranean countries.

Habits.—The Twite is a moorland species, and in all its ways resembles the Linnet, except in its mode of nesting. As with most Finches, its food consists of seeds, but during the nesting season it consumes a great many insects and rears its young upon them. In winter it migrates south in large flocks, which frequent the neighbourhood of the coast, and enliven the marshes with their twittering song, which is very cheery when uttered by a hundred or more birds in concert. The note resembles that of a Redpoll or Siskin more than the voice of a Linnet.

Nest.—Cup-shaped and very neatly made, composed of moss and twigs of heather, lined with finer rootlets, wool, feathers or thistle-down. It is often placed on the ground, but sometimes in a tree or among heather.

Eggs.—Four to six in number. Ground-colour light blue or bluish white with red or purple spots and lines, generally clustered at the larger end of the egg, with an occasional larger spot or scribbling of blackish brown. Axis, 0·7–0·75 inch; diam., 0·5–0·55.

THE LINNET. CANNABINA CANNABINA.

Fringilla cannabina, Linn., S. N., i., p. 322 (1766).
Linaria cannabina, Macg., Br. B., i., p. 371 (1837); Dresser, B. Eur., iv., p. 31, pl. 186 (1875).

Linota cannabina, Newt. ed. Yarr., ii., p. 153 (1877); B. O. U. List Br. B., p. 53 (1883); Lilford, Col. Fig. Br. B., pt. vii. (1888).

Acanthis cannabina, Sharpe, Cat. B. Brit. Mus., xii., p. 240 (1888); Saunders, Man., p. 179 (1889).

Adult Male.—Reddish brown above, streaked with black; forehead crimson; no black on chin; breast crimson; wing-coverts not tipped with white, so as to form a wing-bar; upper tail-coverts and tail-feathers black, edged with white, increasing on the outer feathers; breast and abdomen dull buffy white; bill lead-colour; feet and toes brown; iris hazel-brown. Total length, 5·5 inches; culmen, 0·4; wing, 3·05; tail, 2·25; tarsus, 0·65.

Female.—Browner than the male, and wants the crimson on the crown and breast; the latter sandy buff, like the sides of body and flanks, all streaked with dark brown. Total length, 5·3 inches; culmen, 0·4; wing, 3·0; tail, 2·1; tarsus, 0·5.

Young.—Resembles the old female, but is more reddish brown; wings and tail as in the adults, but the white edgings washed with rufous brown; below white, washed with sandy buff on the breast and sides of the body; the throat spotted with dusky brown, the fore-neck and breast with dusky brown streaks, and the lower breast *spotted with brown.*

In **winter** plumage the colours are much duller than in summer, the crimson of the head and breast being hidden by broad edgings to the feathers. These margins gradually wear off as spring approaches, till the crimson colour alone remains; there is no spring moult.

Range in Great Britain.—Generally distributed, but rarer in some parts of Scotland and not known in the Shetlands.

Range outside the British Islands.—Found over the whole of Europe, as high as lat. 64° in Scandinavia, and in Eastern Russia to lat. 60°. It extends to the Caucasus, but here and in Asia Minor the prevailing form is *Cannabina fringillirostris*, a paler race with the primary-coverts white-edged, which takes the place of the common Linnet throughout Central Asia. Our Linnet is also found in North-western Africa, the Canaries and Madeira. In spring and autumn a considerable migration of

Linnets occurs on our coasts, the arrivals from the Continent being decidedly brighter in plumage than our resident birds.

Habits.—Throughout the autumn and winter Linnets are found in flocks, feeding on the stubbles and open ground, and at the former season they are very common in fields near the sea-shore. In the breeding season they are less gregarious, but many pairs may be found in close proximity to each other in gorse-covered districts, the gorse-bushes being such a favourite nesting place that in many places the bird is known as the "Gorse" Linnet. It nests also in broom and heather, and sometimes has been known to build its home on the ground. Its song is heard to perfection in the spring, and while the hen is sitting, but during the breeding season the bird is much more shy than at other times of the year. Its food consists almost entirely of seeds, and it is not known to feed its young on insects to the same extent as most of the other Finches. As Mr. Howard Saunders remarks: "The food consists of soft seeds, especially those of an oily nature, such as the various species of flax and hemp; grains of charlock, knot-grass, and other weeds are also largely consumed, while in winter various kinds of berries and even oats are devoured."

Nest.—Cup-shaped, composed of moss with fine twigs and grass, lined with hair, sheep's wool and a few feathers.

Eggs.—Four to six in number. Ground-colour bluish, with rufous spots confined to the larger end, where they form a ring or cluster of spots varied with overlying lines and streaks of purplish black. In some instances the larger end of the egg is clouded with purple, speckled over with dots and streaks of purplish brown. Axis, 0·7–0·75 inch; diam., 0·55–0·6.

THE MEALY REDPOLL. CANNABINA LINARIA.

Fringilla linaria, Linn., S. N., i., p. 322 (1766); Lilford, Col. Fig. Br. B., pt. xv. (1890).
Linaria borealis, Macg., Br. B., i., p. 388 (1837).
Linota linaria, Newt. ed. Yarr., ii., p. 133 (1877); Dresser, B. Eur., iv., p. 37, pl. 187 (1877); B. O. U. List Br. B., p. 53 (1883).

Acanthis linaria, Sharpe, Cat. B. Brit. Mus., xii., p. 245 (1888); Saunders, Man., p. 181 (1889).

Adult Male.—Light brown above, with dark brown streaks; forehead crimson; wing-coverts tipped with white, forming wing-bars; chin blackish; throat, fore-neck, and breast beautiful rosy-pink, the feathers generally edged with hoary white; rump ashy white, streaked with blackish, and slightly tinged with rosy; bill yellow, with the tip brown; feet and claws blackish; iris hazel-brown. Total length, 5·2 inches; culmen, 0·4; wing, 2·85; tail, 2·05; tarsus, 0·6.

Adult Female.—Similar to the male, but lacking the crimson forehead and the rose-colour on the breast and rump; chin and upper throat black; remainder of under surface white, with blackish streaks on the side of the body. Total length, 5 inches; culmen, 0·35; wing, 2·75; tail, 2·05; tarsus, 0·55.

Range in Great Britain.—A winter visitor from Shetland south along the east coast of Scotland and England, but less regular in occurrence in the south and Midlands. In some seasons considerable flocks arrive, and we have known the Mealy Redpoll to occur in some numbers in the Thames Valley in winter. They are then found in company with Lesser Redpolls, from which they may be distinguished by their much larger size, especially as regards the feet.

Range outside the British Islands. — Throughout Northern Europe to the limits of the birch-region, across Siberia and North America, but replaced in Greenland by *Cannabina rostrata*, a large race of Mealy Redpoll, with a larger bill and coarser stripes on the under surface.

Habits.—Frequenting the birch and alder trees, the seeds of which form its principal food, in company with Common Redpolls and Siskins.

Nest.—Cup-shaped; composed of bents and shreds of bark with lichens; lined with catkins, hair, and feathers.

Eggs.—Five or six, resembling those of the Linnet, but with a deeper blue ground and, of course, much smaller in size; the reddish shading at the larger ends often clouded with tiny spots of reddish brown and dots and lines of purplish black. In a clutch of eggs taken by Mr. Seebohm in the Petchora there are distinct scribblings near the larger end, similar to those of a Yellow Bunting. Axis, 0·6–0·75; diam., 0·5–0·55.

HOLBOELL'S REDPOLL. CANNABINA HOLBOELLI.

Linaria holboelli, Brehm., Vög. Deutschl., p. 280 (1831).
Acanthis holboelli, Sharpe, Cat. B., xii., p. 250 (1888).

Adult Male.—Similar to the Mealy Redpoll, but larger and with a very much larger bill. Total length, 5 inches; culmen, 0·5; wing, 2·9–3·0; tail, 2·2; tarsus, 0·5.

Range in Great Britain.—Two specimens of this large Redpoll are in the British Museum. They were formerly in the collection of Mr. John Gould, and are labelled by him as having been obtained near Norwich in January. Professor Newton suggests that the longer bill of this Redpoll is due to the food on which the bird subsists at certain seasons of the year.

THE LESSER REDPOLL. CANNABINA RUFESCENS.

Linaria rufescens, Vieill. Mem. R. Accad. Torino, xxiii., Sc. Fis., p. 202 (1816).
Linaria minor, Macg., Br. B., i., p. 383 (1837).
Linota rufescens, Newt. ed. Yarr., ii., p. 146 (1877); Dresser, B. Eur., iv., p. 47, pl. 188 (1877); B. O. U. List Br. B., p. 54 (1883).
Acanthis rufescens, Sharpe, Cat. B. Brit. Mus., xii., p. 252 (1888); Saunders, Man., p. 183 (1889).
Fringilla rufescens, Lilford, Col. Fig. Br. B., pt. xiii. (1890).

Adult Male.—A smaller bird than the Mealy Redpoll, much more rufous-brown in colour, with only a little white; bill yellow, with a blackish tip; feet and toes blackish; iris brown. Total length, 4·5 inches; culmen, 0·35; wing, 2·7; tail, 1·95; tarsus, 0·55.

Adult Female.—Lacks the beautiful red colour on the breast and rump. Total length, 4·5 inches; culmen, 0·35; wing, 2·7; tail, 1·9; tarsus, 0·5.

Young.—Like the old female, but the head and back streaked with whitish; rump paler than the back and mixed with white;

no black on the throat; under surface white, with a little yellow on the abdomen; breast and flanks spotted with broad marks of black.

Range in Great Britain.—Local during the breeding season, nesting generally in England, as Mr. Howard Saunders points out, "north of a line drawn through Shropshire, Leicestershire, and Norfolk; locally in Suffolk and Cambridgeshire; sparingly in Gloucestershire and along the upper part of the Thames Valley; and more frequently than is generally supposed in the counties of Middlesex, Surrey, and Kent." In the Southern Counties it is very local as a breeding bird, and in the extreme south-west is rare at any time. In winter it is more generally distributed over Great Britain, and large numbers are caught on the autumn and spring migrations.

Range outside the British Islands.—The Lesser Redpoll is a bird of Western Europe, but nests in the Alpine regions of Italy, Savoy, and Styria. It is also found breeding in France, Belgium, Holland, and Western Germany, and has once been known to nest in Heligoland.

Habits.—In winter it frequents the birch and alder trees, and was formerly quite common in the Thames Valley in winter, in company with Siskins and Goldfinches. It is now, however, not nearly so common near London during the winter months as it used to be. Its ways of life are very similar to those of the Siskin.

Nest.—A pretty and compact little cup-shaped structure, composed of moss and grass-stems, with a few twigs, and lined with vegetable down and hair, with some feathers.

Eggs.—Three to six in number, bluish, spotted with red, sometimes clouding round the larger end, with overlying spots of purplish brown dotted about the latter. Axis, 0·6 inch; diam., 0·4.

THE SPARROWS. GENUS PASSER.

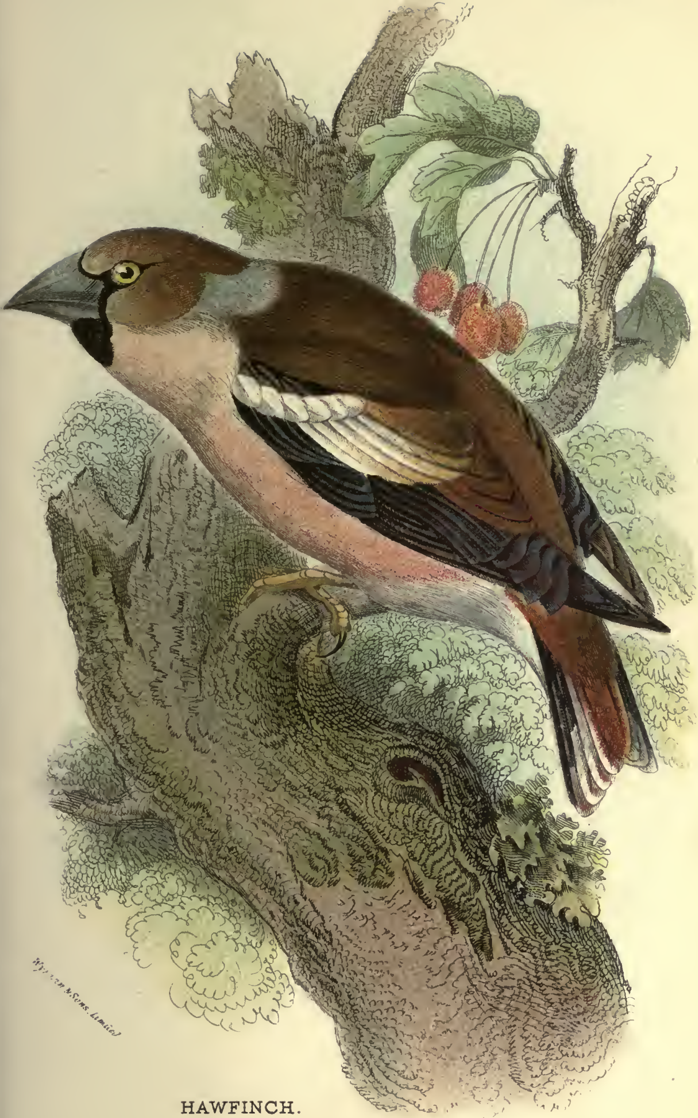
Passer, Briss., Orn., iii., p. 71 (1760).

Type, *P. domesticus* Linn.

In the genus *Passer* and the rest of the Finches to be treated of, the bill is much more swollen and "globose," the

INSTITUTION
GLASGOW

PLATE VI.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HAWFINCH.

upper edge of the bill being gently curved towards the tip, while the line of the lower mandible is more abrupt. In the species which we have been considering before, the bill is more compressed and pointed and not so swollen.

The introduction of the English Sparrow into America and many of our colonies has greatly widened the area of geographical distribution of the genus *Passer*, which is, however, essentially a type of the temperate portions of the Old World, Europe alone possessing three distinct species, viz., the House-Sparrow (*Passer domesticus*), the Italian Sparrow (*P. italiæ*), and the Spanish Sparrow (*P. hispaniolensis*). Peculiar species occur in Central Asia, Thibet, Sind, and Palestine, but the larger number of the members of the genus *Passer* are found in Africa, though here the species are of a somewhat different type from the European ones. The Tree-Sparrow (*P. montanus*), extends throughout the greater part of Europe and Asia, and in many countries it takes the place of the House-Sparrow in the towns.

THE HOUSE-SPARROW. PASSER DOMESTICUS.

Fringilla domestica, Linn., S. N., i., p. 323 (1766).
Passer domesticus, Macg., Br. B., i., p. 340 (1837); Newt. ed. Yarr., ii., p. 89 (1876); Dresser, B. Eur., iii., p. 587, pl. 176, fig. 1 (1876); B. O. U. List Br. B., p. 51 (1883); Lilford, Col. Fig. Br. B., pt. vi. (1888); Sharpe, Cat. B. Brit. Mus., xii., p. 307 (1888); Saunders, Man., p. 170 (1889).

Adult Male.—Above chestnut, streaked with black; throat black; lesser wing-coverts uniform chestnut; *crown uniform dark ashy grey;* lower back and rump uniform ashy brown; sides of neck and a broad superciliary streak deep chestnut; feathers below the eye black; ear-coverts and sides of face ashy white, with a little white spot behind the eye; bill leaden blue; feet brown; iris hazel. Total length, 6 inches; culmen, 0·55; wing, 2·95; tarsus, 0·75.

In **winter** the plumage is duller owing to the ashy brown margins with which the feathers are supplied. These edges gradually wear off and leave the full summer plumage, without a moult. The bill is horny brown in winter and becomes leaden blue in summer.

Adult Female.—Differs from the male in wanting the black throat and being altogether browner in colour; the back streaked with blackish; over the eye a pale streak; rump pale ashy brown; cheeks dingy brown like the ear-coverts. Total length, 5·2 inches; culmen, 0·45; wing, 3·0; tail, 2·2; tarsus, 0·75

Young.—Resembles the old female, but is whiter below, especially on the throat.

Range in Great Britain.—Universally distributed.

Range outside the British Islands.—Generally throughout Europe, "where grain will grow," as Mr. Howard Saunders puts it. Replaced in Italy by *P. italiæ*, and in most of the Mediterranean countries by *P. hispaniolensis*, though the Common Sparrow is often found in the same districts as the latter species. The Eastern form of the Sparrow, *P. indicus*, is only a smaller and somewhat purer coloured race of our bird, which may thus be said to extend eastwards to India and the neighbourhood of Lake Baikal. The Sparrow has been now introduced into North America, Australia, New Zealand, and other countries, to the detriment and, in some cases, the extinction of the native birds.

Habits.—These are too well-known to require a detailed description. Considerable controversy has taken place as to the harm done by the sparrows to the farmers, and on this point a pamphlet by Mr. J. H. Gurney, "On the Misdeeds of the House-Sparrow," may be read with interest, as also an excellent monograph of the species written by Mr. Walter B. Barrows, and published by the United States Department of Agriculture, "especially as to the relations of the Sparrow to agriculture." Doubtless during the nesting season the Sparrow largely feeds its young on insects, and we have seen one shot by our friend Major Wardlaw Ramsay, with its crop perfectly full of the Bean Aphis (*Aphis rumicis*), but at other seasons of the year it is capable of inflicting great damage, from the amount of grain it devours.

Nest.—A rough structure of grasses and straws, hay, and all kinds of materials, but thickly and warmly lined with feathers. It is usually placed in holes of buildings and trees, or under the eaves of roofs; it often occupies House-Martins' nests and even the burrows of Sand-Martins. Its reproductive powers are proverbial, and as many as three broods are often reared in the season.

Eggs.—Four to six in number, very variable in colour, even in specimens of the same clutch. Ground-colour white or greenish white, with spots and blotches of brown, purplish or greenish in tint. Occasionally the eggs are so thickly mottled with brown as to be nearly uniform, and a common type of Sparrow's egg is white, dotted all over with tiny black markings. Axis, 0·8–1·0 inch; diam., 0·6–0·65.

THE TREE-SPARROW. PASSER MONTANUS.

Fringilla montana, Linn., S. N., i., p. 324 (1766).

Passer montanus, Macg., Br. B., i., p. 351 (1837); Dresser, B. Eur., iii., p. 597, pl. 178 (1875); Newt. ed. Yarr., ii., p. 82 (1876); B. O. U. List Br. B., p. 51 (1883); Sharpe, Cat. B. Brit. Mus., xii., p. 301 (1888); Lilford, Col. Fig. Br. B., pt. ix. (1888); Saunders, Man., p. 173 (1889).

Adult Male.—Throat and fore-neck black; back streaked with black; head uniform chocolate-brown; lesser wing-coverts uniform brown, not chestnut; ear-coverts ashy whitish, with a black patch on the lower parts; sides of neck white; under surface of body ashy; bill black; legs light brown; iris brown. Total length, 5·6 inches; culmen, 0·45; wing, 2·75; tail, 2·0; tarsus, 0·7.

Adult Female.—Similar to the male in colour. Total length, 5·2 inches; wing, 2·65.

Unlike the House-Sparrow, there is scarcely any difference between the plumage of the Tree-Sparrow in summer and winter, and the summer plumage is not acquired by any shedding of the pale tips to the feathers. **Young birds** resemble the adults, but are duller in colour.

Range in Great Britain.—According to Mr. Howard Saunders, the Tree-Sparrow is extending its range in the British Islands. It is an inhabitant chiefly of the eastern counties of Scotland

and England, and in the other portions of the country it is decidedly local. In Ireland this is especially the case; it is not uncommon near Dublin, and has more recently been recorded from North Aran Island, co. Donegal.

Range outside the British Islands.—In most parts of Europe, the Tree-Sparrow is a local species, as in Great Britain, but is extending its range northward in the western countries, having reached the Faeroes and settled there within the last twenty-five years, and it has now extended its range in Scandinavia beyond the Arctic Circle. In many other parts of Europe it is more abundant than the House-Sparrow, and its home extends throughout temperate and tropical Asia, along the line of the Himalayas to the Burmese countries and the Malayan Peninsula to Java, while to the northward the Tree-Sparrow is found throughout China to Manchuria and Japan.

Habits.—A more elegant and lively bird than the House-Sparrow, the present species has also a clearer and more musical note. It is also an inhabitant of the open country, avoiding the towns, where its congener is so much at home, though it occasionally builds its nests in barns and outhouses. A favourite nesting-place in this country is in the holes of pollard willows, and it will even build in holes of walls or in wells.

Nest.—Composed of straw, grasses, and rootlets, but not so rough or clumsy in construction as that of the Common Sparrow. The lining consists of wool, feathers, and sometimes a little hair, according to Mr. Seebohm.

Eggs.—Three to five in number, smaller than those of the House-Sparrow, but varying in markings and colour, as is the case with that species; as a rule, however, the tendency of the Tree-Sparrow's eggs is towards a darker colour than the House-Sparrow's, and the majority of a series of clutches are more uniform. Axis, 0·7–0·8; diam., 0·55–0·3.

THE CANARIES. GENUS SERINUS.

Serinus, Koch, Syst. Baier, Zool., p. 228 (1816).
Type, *S. serinus* (Linn.).

The members of this genus recall the Siskins in their mode of coloration, having a considerable amount of yellow and green in their plumage. The bill is swollen and the curve of both mandibles is equally marked towards the tip, so that the bill is not pointed as in the Siskins, but is more like that of a small Grosbeak.

The Canaries are mostly African, sixteen species being peculiar to that continent. In Southern and Central Europe the Serin Finch is found, and the true Canary Bird of the Azores, Madeira, and the Canary Islands is only a large form of the Serin Finch. A third species, *S. canonicus*, occurs in Palestine. A small Serin (*S. pusillus*) with a red forehead, recalling the appearance of the Redpolls, is found from Asia Minor and Syria eastwards to Central Asia and the North-western Himalayas.

THE SERIN FINCH. SERINUS SERINUS.

Fringilla serinus, Linn., S. N., i., p. 320 (1766).

Serinus hortulanus, Dresser, B. Eur., iii., p. 549, pl. 170 (1875); Newt. ed. Yarr., ii., p. 111 (1877); B. O. U. List Br. B., p. 49 (1883); Saunders, Man., p. 169 (1889).

Serinus serinus, Sharpe, Cat. B. Brit. Mus., xii., p. 368 (1888).

Adult Male.—General colour above pale brown, streaked with black, the feathers also marked with yellow; throat and breast yellow, with an ashy shade on the lower throat; forehead yellow; sides of body ashy-brown, very distinctly streaked with black; abdomen white. Total length, 4·5 inches; culmen, 0·3; wing, 2·8; tail, 1·9; tarsus, 0·55.

The Female is coloured like the male, but the plumage is not quite so bright. Total length, 4·5 inches; wing, 2·6.

Range in Great Britain.—A very rare visitor, some eight examples having been taken in England either in spring or autumn.

Range outside the British Islands.—An inhabitant of Southern and Central Europe, extending through the Mediterranean countries to Asia Minor and Palestine. Northwards its range extends to the Rhine Provinces and to Denmark, and it breeds near Frankfort and Darmstadt. The Canary (*Serinus canaria*) from the Canary Islands and the Azores is nothing but a large race of the Serin Finch.*

Habits.—Very much resembling those of a Siskin, but the Serin is of a more lively nature, and its clear and ringing call-note makes it very conspicuous as it sings from the top of a tree, or mounts into the air. "Its note resembles the word *zi-zi-zi* often repeated, and a flock of birds settled on a tree produces a peculiar buzzing, or almost hissing sound." (*Howard Saunders.*)

Eggs.—Resemble very closely those of the Linnet, but are smaller, with a bluish white ground-colour, mottled and spotted with reddish brown or pink with darker purplish black spots. Axis, 0·6–0·7 inch; diam., 0·45–0·5.

THE RED BULLFINCHES. GENUS CARPODACUS.

—*Carpodacus*, Kaup., Natürl. Syst., p. 161 (1829).

Type, *C. erythrinus* (Pall.).

These birds are similar in form to the Canaries, but are somewhat more stoutly built, and have a good deal of crimson or purple in their coloration.

Only one species has occurred in England, the Scarlet Bullfinch (*C. erythrinus*), which is a North European form occurring throughout Northern Asia. A large number of species inhabit the mountains of Asia, particularly the Himalayas, and at least half-a-dozen are found in North America, some of them ranging into Mexico.

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* Wild Canaries, identical with the resident bird of the Canary Islands, have been frequently caught in England. Some ornithologists consider these birds to have been imported, others believe that they may be occasional immigrants to our shores. It seems quite feasible to suppose that escaped Canaries of the orthodox yellow colour would, in a very short space of time, revert to the plumage of the wild stock from which they were derived; and it is probably birds of this category which have been captured in England, rather than wanderers from the far distant home of the species. Other Canaries, *S. canicollis* and *S. icterus*, have also been captured in England; but as these are by no means uncommon cage-birds, there is no doubt that the individuals recorded had escaped from captivity.

THE SCARLET BULLFINCH. CARPODACUS ERYTHRINUS.

Loxia erythrina, Pall., N. Comm. Acad. Sci., St. Petersb., xiv., p. 587, pl. 23, fig. 1. (1770).

Carpodacus erythrinus, Dresser, B. Eur., iv., p. 75, pl. 195 (1871); B. O. U. List Br. B., p. 55 (1883); Sharpe, Cat. B. Brit. Mus., xii., p. 391 (1888).

Pyrrhula erythrina, Newt. ed. Yarr., ii., p. 189 (1877); Saunders, Man., p. 189 (1889); Lilford, Col. Fig. Br. B., pt. xiv. (1890).

Adult Male.—Dark brown, washed with rosy or pale crimson; lower back and rump dull rosy; crown of head dull crimson, this colour overspreading the nape and hind-neck; cheeks, throat, and breast bright crimson, paler on the latter; centre of breast and abdomen white, slightly washed with crimson; bill greyish horn-colour, the ridge more dusky; feet and toes brown; iris hazel. Total length, 5·5 inches; culmen, 0·45; wing, 3·2; tail, 2·25; tarsus, 0·75.

Adult Female.—Above olive-brown, with dusky centres to the feathers; rump brown like the back, with no crimson; wing-coverts tipped with yellowish white, forming a double wing-bar; throat dull white, streaked with brown; fore-neck and breast, ochreous buff, streaked with dusky; abdomen white. Total length, 5·2 inches; wing, 3·0.

Young Male.—Similar to the female, but not so distinctly striped on the throat and breast; wing-bars yellow and very distinct.

Range in Great Britain.—An accidental straggler, having occurred twice: near Brighton in September, and near Hampstead in October. As the species is one which is extending its range in Western Europe, these are not likely to have been individuals escaped from confinement.

Range outside the British Islands.—Breeds from Eastern Prussia eastwards through Northern Russia and Southern Siberia to the Pacific, as well as from Asia Minor eastwards to Central Asia. It winters in India and the countries to the south of its breeding-range, and has occurred on migration in Southern Sweden, Heligoland, and France; while Mr. Howard Saunders records two specimens from the south of Spain.

Habits.—Mr. Seebohm observes: "The marshy forest-banks of the great Siberian rivers are a very favourite resort of this bird; and in the Baltic Provinces, where it is common, and in the valley of the Upper Volga, it is described as frequenting willows and other low trees in marshy districts."

Nest.—Described by Mr. Seebohm as built in the fork of a small bush, or amongst climbing-plants not far from the ground, and resembling rather that of a Warbler than that of a Finch. It is deep, carefully made, so slenderly put together as to be semi-transparent when held up to the light, and composed of long grass-stalks and lined with horse-hair.

Eggs.—Four to five in number, of a beautiful blue colour, with small underlying spots of reddish brown, and darker overlying spots of purplish brown or black, chiefly collected round the larger end. Axis, 0·75–0·85 inch; diam., 0·55–0·6.

THE CROSSBILLS. GENUS LOXIA.

Loxia, Linn. Syst., Nat., i., p. 299 (1766, pt.).

Type, *L. curvirostra* Linn.

The Crossbills, so called from their mandibles crossing each other at the end of the bill, are easily recognised by this peculiarity. In the very young birds this feature is not noticeable, the bill being apparently like that of any other Finch, but the mandibles begin to be irregular in shape as soon as the birds are full-sized.

The common Crossbill varies very much in size, the largest birds being found in Northern Europe, and possessing such big bills that they have generally been considered a separate species, and have been called the Parrot Crossbill (*L. pytiopsittacus*), while the American form (*L. americana*) is very much smaller, and the Himalayan one (*L. himalayana*) the smallest of all. They are all, however, mere races of the ordinary Crossbill of Europe (*L. curvirostra*).

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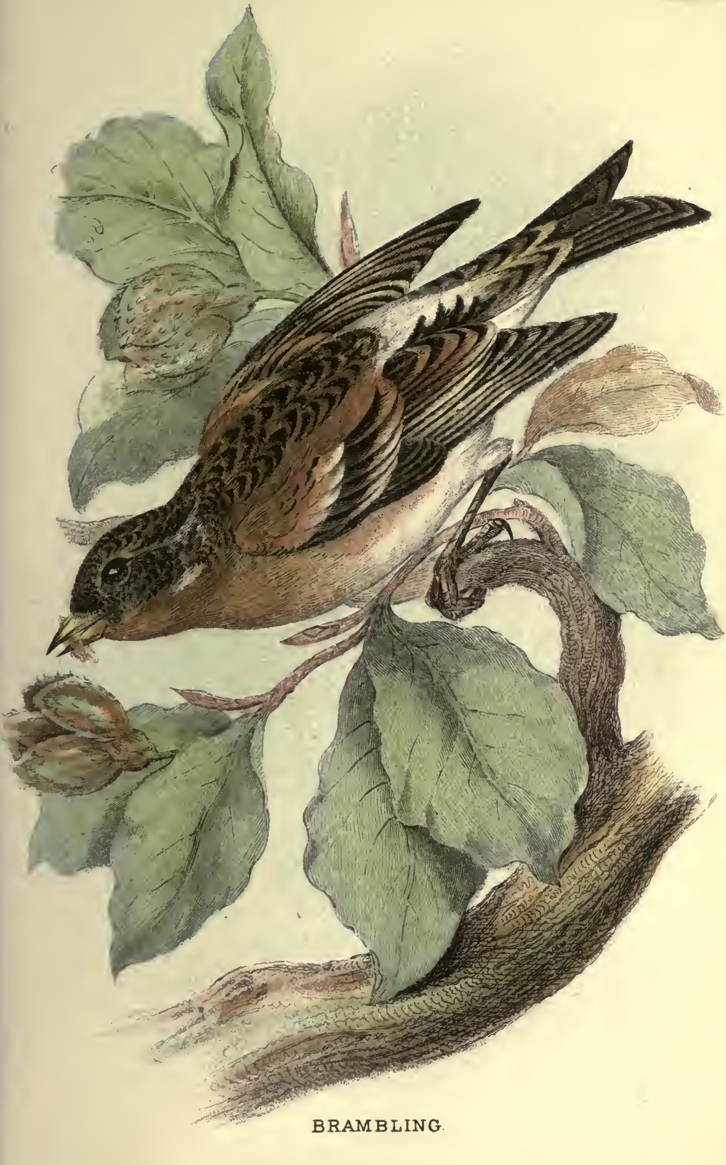
PLATE VII.



BRAMBLING.

There are also Crossbills which have white bands on the wing. Of these there are two, the European White-winged Crossbill (*L. bifasciata*), which ranges to Eastern Siberia, and the American White-winged Crossbill (*L. leucoptera*), which takes the place of *L. bifasciata* in North America.

THE CROSSBILL. LOXIA CURVIROSTRA.

(*Plate IX.*)

Loxia curvirostra, Linn., S. N., i., p. 299 (1766); Newt. ed. Yarr., ii., p. 187 (1877); Dresser, B. Eur., iv., p. 127, pl. 203 (1872); B. O. U. List Br. B., p. 57 (1883); Sharpe, Cat. B. Brit. Mus., xii. p. 435 (1888); Saunders, Man., p. 193 (1889).

Loxia europæa, Macg., Br. B., i., p. 417 (1837).

Loxia pytiopsittacus, Bechst., Orn. Taschenb, p. 106 (1882).

Adult Male.—General colour above pale vermilion, the rump clearer vermilion or pale scarlet; under surface also vermilion; bill and feet brown; iris hazel. Total length, 6 inches; culmen, 0·8; wing, 3·8; tail, 2·2; tarsus, 0·6.

Adult Female.—Not so brightly coloured as the male, being olive-yellow, where the latter is red.

Young Birds are dull coloured like the female, but are streaked both above and below, the under surface being dull white, slightly tinged with yellow and streaked with blackish brown.

Range in Great Britain.—Breeds in the pine districts of Scotland, and in Ireland. A nest from co. Waterford has been presented by Mr. R. T. Ussher to the British Museum, and it may be seen among the series of cases illustrating our native birds and their nests. In the southern counties of England the Crossbill also nests in suitable localities, but it is chiefly known as a winter visitant in the south.

Range outside the British Islands.—Over the greater part of Europe and Northern Asia, as well as North America, being everywhere an inhabitant of the pine regions. Several races are known, the most familiar to English ornithologists being the so-called "Parrot" Crossbill (*Loxia pytiopsittacus*), which has a much larger bill than the ordinary species, and is an inhabitant chiefly of Northern Europe, whence it ranges occasionally into the British Islands. In the Himalayas the race of the Crossbill known as *Loxia himalayana* is very small, and many ornithologists consider the American Crossbill to be separable as a race. As stated in the "Catalogue of Birds," we have not been able to recognise the differences of these various races.

Habits.—In winter, when the Crossbill is generally met with in the southern counties of England, it is gregarious, going about in small flocks or in parties. It is a bird of irregular migration, and its movements within the confines of the British Islands are also irregular. During the nesting season it is decidedly shy, but in winter is very tame, and it can be observed from a very short distance. The food in summer consists largely of insects, on which the young are principally reared. The Crossbills feed also on the seeds of the pines, which they extract very dexterously from the cones, as well as on berries. The ordinary Crossbill devours the seeds of the larch and spruce-firs, but the large race, the so-called "Parrot" Crossbill, is said by Mr. Seebohm to find its principal food in the seeds of the Scotch fir, which its powerful bill enables it to extract from the larger cones of that tree. The Crossbill is a very early breeder.

Nest.—Cup-shaped, and generally placed in a fir-tree, often at a considerable height from the ground. It is composed of grass and moss, with a little wool and a few feathers in the lining; outside the nest is composed of twigs, and in general appearance is like that of the Bullfinch.

Eggs.—Four to five. Ground-colour varying from stone-colour or creamy-white or pale bluish, with the usual reddish spots and darker purplish-brown overlying spots and scribblings. The spots are distributed over the whole surface of the eggs, but when strongly marked, they are collected round the larger end of the egg. Axis, 0·8–0·9 inch; diam.,

THE TWO-BARRED CROSSBILL.* LOXIA BIFASCIATA.

Crucirostra bifasciata, Brehm., Ornis., iii., p. 85 (1827).
Loxia bifasciata, Newt. ed. Yarr., ii., p. 211 (1877); Dresser, B. Eur., iv., p. 141, pl. 205 (1877); B. O. U. List Br. B., p. 58 (1883); Sharpe, Cat. B. Brit. Mus., xii., p. 58 (1888); Saunders, Man., p. 195 (1889).

Adult Male.—Distinguished from the common Crossbill by the white bands on the wings, formed by the white tips to the median and greater coverts. Total length, 5·5 inches; culmen, 0·7; wing, 3·65; tail, 2·1; tarsus, 0·7.

Range in Great Britain.—An accidental visitor, sometimes occurring in some numbers, as in 1889.

Range outside the British Islands.—Accidental in many parts of Central Europe, but resident in Northern Russia and Northern Asia across Siberia to the Pacific.

Habits.—Like those of the common Crossbill.

Nest and Eggs.—Like those of the common Crossbill, but smaller in size, the egg said to be darker in colour than that of the last-named bird.

THE BULLFINCHES. GENUS PYRRHULA.

Pyrrhula, Briss., Orn., iii., p. 308 (1760).

Type, *P. europæa* (Vieill.).

The peculiarly swollen and evenly rounded bill, which is very broad at the base, is the chief distinguishing character of the Bullfinches, apart from their coloration, which is also somewhat peculiar. The sexes carry out the same style of colour, but the males are generally red-breasted, while the females are grey-breasted. In some species, however, like the Azorean Bullfinch (*P. murina*) and Cassin's Bullfinch (*P. cassini*), both sexes are equally brown or grey, with no red. Similar Bullfinches, with the sexes alike, occur in the Himalayas, which possess three species, but the genus is essentially a Palæarctic one, and is to be found throughout the region, one species only, *P. cassini*, extending its range to the Nearctic Region and occurring in Alaska.

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* The White-winged Crossbill (*Loxia leucoptera*) is the American form of the Two-barred Crossbill. It is rather more crimson in its colour, and has a little more black on the scapulars. Total length, 9 inches; wing, 3·55. It is said to have occurred in the British Islands on several occasions.

THE BULLFINCH. PYRRHULA EUROPÆA.

(*Plate X.*)

Loxia pyrrhula (nec. Linn.), Lath. Ind. Orn., i., p. 387 (1790).
Pyrrhula pileata, Macg., Br. B., i., p. 407 (1837).
Pyrrhula europæa, Vieill.; Dresser, B. Eur., iv., p. 101, pl. 199 (1876); Newt. ed. Yarr., ii., p. 166 (1877); B. O. U. List Br. B., p. 56 (1883); Sharpe, Cat. B. Brit. Mus., xii, p. 447 (1888); Saunders, Man., p. 187 (1889).

Adult Male.—Bluish grey, with a conspicuous white band across the rump; wings black, with a small spot of pale vermilion on the innermost secondaries; crown of head black; sides of face, ear-coverts, cheeks, and under surface of body dull vermilion; lower abdomen and under tail-coverts white; bill black; feet dark brown; iris brown. Total length, 6 inches; culmen, 0·45; wing, 3·1; tail, 2·4; tarsus, 0·65.

Adult Female.—Differs from the male in having the back brown, the hind neck ashy-grey, forming a tolerably distinct collar; ear-coverts, sides of face, and under surface of body vinous chocolate, paler on the abdomen, the under tail-coverts white. Total length, 6 inches; wing, 3·1.

Range in Great Britain.—Generally distributed, and increasing its range in Scotland, though still somewhat local in most parts of the country, being absent in the Hebrides, and only an occasional visitor to the Orkneys and Shetland.

Range outside the British Islands.—A bird of Western Europe, extending east to Germany and south to the Mediterranean countries and Algeria, but replaced in Scandinavia and Europe east of Poland by a larger and purer coloured form, commonly known as the "Russian Bullfinch," *Pyrrhula pyrrhula*.

Habits.—Shy and retiring, and always to be seen in pairs both in summer and winter. Its piping call-note is a feature of the woodland life of England, when the Bullfinch is by no means rare, and is to be recognised in flight by the white band across the back, which is very conspicuous. Its food consists almost entirely of seeds, fruits, and berries, but it is very partial to the young buds of fruit-trees, and numbers are shot in the spring by gardeners, who resent the havoc which the bird works among the buds of the currant and gooseberry bushes.

Nest.—A beautiful structure, on account of the network of fine twigs with which it is surrounded, the inside of the nest being neatly constructed of fine rootlets.

Eggs.—Four to six in number. Ground-colour a clear blue, thickly spotted with red at the larger end, and having conspicuous spots and blotches of purplish brown, in most cases very distinctly pronounced. Axis, 0·75–0·8 inches; diam., 0·55–0·6.

THE PINE-FINCHES. GENUS PINICOLA.

Pinicola, Vieill., Ois. d'Amer., Sept., p. iv. (1807).

Type, *P. enucleator* (Linn.).

Only one species of the genus *Pinicola* is known, which occurs in the northern parts of the Old and New Worlds. It is generally called the Pine "Grosbeak," but it is not a Grosbeak at all, but a Bullfinch; in fact, it might very well be placed in the genus *Pyrrhula*, as has often been done. Its large size, however, different style of coloration, and somewhat differently-shaped bill, render it convenient to separate the genus *Pinicola* from the true Bullfinches.

THE PINE-FINCH. PINICOLA ENUCLEATOR.

Loxia enucleator, Linn., S. N., i., p. 299 (1766).

Pyrrhula enucleator, Macg., Br. B., i., p. 411 (1837); Newt. ed. Yarr., ii., p. 177 (1877); Saunders, Man., p. 191 (1889).

Pinicola enucleator, Dresser, B. Eur., iv., p. 111, pl. 201 (1874); Sharpe, Cat. B. Brit. Mus., xii., p. 459 (1888).

Adult Male.—Above rosy or crimson; the upper surface mottled with darker brown markings before the tips of the feathers; lower back and rump uniform rosy; wings dark brown, with rosy margins to the feathers, broader on the inner secondaries; crown uniform rosy or pale crimson, as also the under surface of the body, which is ashy whitish on the lower abdomen and under tail-coverts. Total length, 8·5 inches; culmen, 0·65; wing, 4·15; tail, 3·25; tarsus, 0·86.

Adult Female.—Lacks the rosy colour of the male, the lower back being ashy like the rest of the back, with dusky centres to the feathers; quills and tail-feathers edged with yellowish white or olive; under surface of body ashy grey, washed with golden olive on the throat and breast; abdomen and under tail-coverts pale ashy. Total length, 8 inches; wing, 4·0.

Range in Great Britain.—Accidental only; the numerous records of its capture in this country resting in nearly every case on unsatisfactory evidence.

Range outside the British Islands.—An inhabitant of the pine-woods of Northern Europe, across Northern Asia and North America, in the vicinity of the Arctic Circle. In Central Europe it has occurred only as an irregular wanderer.

Habits.—According to Mr. Seebohm, the Pine-Finch goes about in flocks during the winter, but disperses through the pine-woods during the nesting season. The call-note is something like that of the Bullfinch. In disposition it is somewhat shy and frequents the tops of the trees, affecting the woods by the sides of streams. Its food consists of "buds of various forest-trees, the seeds of pine- and fir-cones, and the berries of various shrubs, especially those of the southernwood."

Nest.—"Made on the same model as those of the Hawfinch and Bullfinch, but of coarser materials. The outside is a framework of slender fir-twigs, and the inside, which projects above the outside, is composed of roots, fine grass, and a lichen which grows on the branches of the trees, and which might easily be mistaken for hair." (*Seebohm.*)

Eggs.—Three to four in number. Something like large Bullfinch's eggs in appearance, but much deeper blue, with plentiful underlying spots of purplish grey, and overlying spots of brown, with darker blotches and spots of purplish brown, collecting chiefly at the larger end, but in many cases distributed over the egg. Axis, 1·0–1·1 inch; diam., 0·7–0·75.

THE BUNTINGS. SUB-FAMILY EMBERIZINÆ.

A very widely-distributed group of birds, especially developed in Northern and Southern America, and likewise spread over the greater part of the Old World, but not occurring in the Malay Archipelago, Australia, and the Pacific Islands.

The form of the bill is the best character for separating the Buntings from the other Finches, for the angle of the chin is very strongly marked and the bill is usually gaping—that is to say, there is a distinct gap in the outline of the closed bill. Many Buntings have a knob-like protuberance on the palate or roof of the mouth.

THE TRUE BUNTINGS. GENUS EMBERIZA.

Emberiza, Briss., Orn., iii., p. 257 (1760).

Type, *E. citrinella* Linn.

In the true Buntings, as distinguished from the Long-spurs, the hind claw is not strongly developed, and is never longer than the hind toe. The wing is scarcely longer than the tail, the nostrils are hidden by little bristly plumes, and the tail has always a white pattern in it, very conspicuous during flight.

THE REED-BUNTING. EMBERIZA SCHÆNICLUS.

Emberiza schœniclus, Linn., S. N., i., p. 311 (1766); Macg., Br. B., i., p. 453 (1837); Newt. ed. Yarr., ii., p. 23 (1876); Dresser, B. Eur., iv., p. 241, pls. 221–222 (1878); B. O. U. List Br. B., p. 62 (1883); Sharpe, Cat. B. Brit. Mus., xii., p. 480 (1888); Saunders, Man., p. 211 (1889).

Adult Male.—Rufous above, streaked with black, and with pale edgings to the feathers; lower back and rump ashy grey, streaked with black; scapulars and lesser wing-coverts chestnut, the former streaked with black; *head and throat black;* under surface of body white, *streaked with black on the* *sides and flanks.* Total length, 6 inches; culmen, 0·15; wing, 3·0; tail, 2·0; tarsus, 0·75.

In **winter** the bird is much browner than in summer, the feathers having sandy edges, which gradually wear away in the spring, leaving the full plumage in its entirety, without any moult.

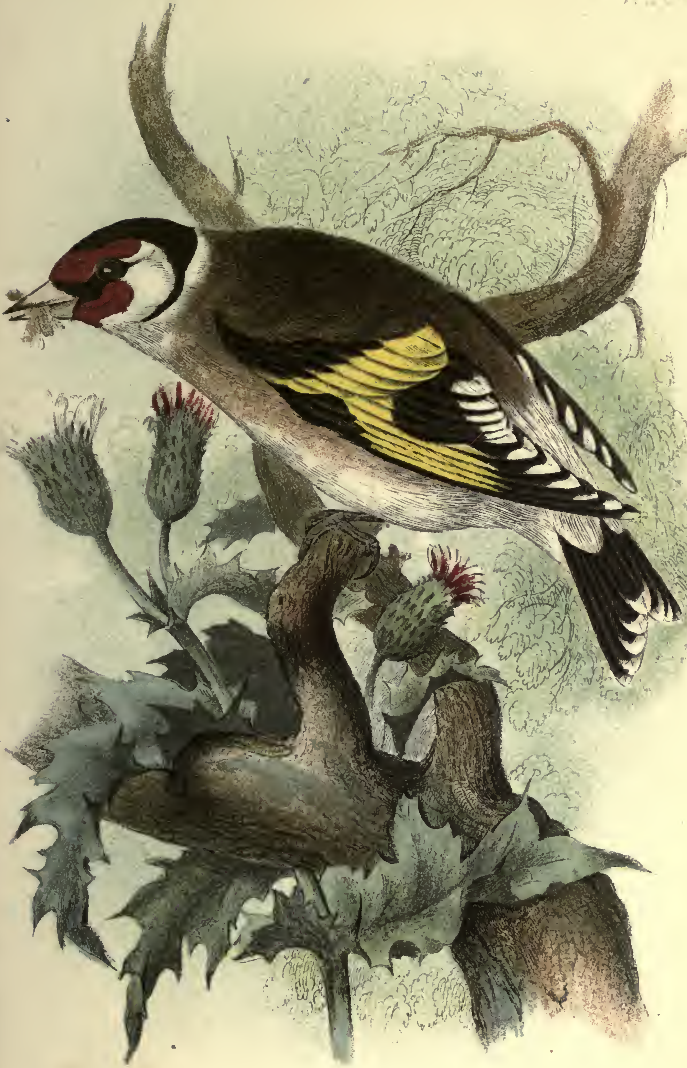
Adult Female.—Differs from the male in wanting the black head and throat; the under surface of the body white, without any yellow tinge; *the sides streaked with dusky brown;* breast distinctly streaked; throat ashy fulvous, with a broad black streak on either side widening out on each side of the neck; centre of crown brown, streaked with black, and resembling the back; *lesser wing-coverts chestnut.* Total length, 5·2 inches; wing, 2·9.

Range in Great Britain.—Found everywhere, and breeding in suitable places, except in the Shetlands, where it is only an irregular visitor.

Range outside Great Britain.—Europe generally, extending east to the Yenesei Valley, and said to occur in Mongolia and Kamtchatka, but not extending north beyond the forest growth. It is certainly found in Central Asia and throughout Turkestan, occurring in North-western India in winter. In the countries of the Mediterranean it is replaced in many districts by the large Marsh Bunting (*Pyrrhulorhyncha palustris*).

Habits.—The Reed-Bunting is a familiar object on our marshes and rivers, the black-and-white head-dress of the male rendering him very conspicuous as he utters his twittering song from the top of some bulrush or low bush. It is a bird frequently to be observed in summer on the banks of the Thames and other rivers in England. In the autumn and winter the Reed-Buntings collect in considerable flocks and frequent the stubble-fields in company with Sparrows and Chaffinches. Large numbers visit our shores in autumn, and it was one of the most plentiful migrants which we saw in Heligoland. As is the case with most of our Finches, the food of the Reed-Bunting in summer consists largely of insects, but in winter it feeds chiefly on seeds and grain.

PLATE VIII.



GOLDFINCH.

Nest.—Generally placed low down in some marshy bank, but we have often found it in a bush a yard or two above the water, though never suspended in reeds.

Eggs.—Four to six in number. Ground-colour, stone-brown or clay-colour, scribbled and blotched all over with black, with occasional spots of black, the "writing" marks always very distinct. Axis, 0·75–0·85; diam., 0·55–0·6.

THE LITTLE BUNTING. EMBERIZA PUSILLA.

Emberiza pusilla, Pall. Reise. Russ. Reichs., iii., p. 697 (1776); Newt. ed. Yarr., ii., p. 34 (1876); Dresser, B. Eur., iv., p. 235, pl. 220 (1877); B. O. U. List Br. B., p. 61 (1883); Seeb., Br. B., ii., p. 144 (1884); Sharpe, Cat. B. Brit. Mus., xii., p. 487 (1888); Saunders, Man., p. 209 (1889).

Adult Male.—Above rufous-brown, broadly streaked with black, the rump duller in colour; under surface white, *the sides of the body streaked with blackish-brown*, but without any tinge of yellow below; breast distinctly streaked; ear-coverts and throat vinous-chestnut; bill brown, whitish on the lower mandidle; feet reddish-grey; iris brown. Total length, 4·8 inches; culmen, 0·4; wing, 2·8; tail, 2·1; tarsus, 0·8.

Adult Female.—Like the male, but not quite so richly tinted, and less distinctly striped below.

Young.—Lacks the rufous colour on the throat, which is white. It may be distinguished from that of the Reed-Bunting by its smaller size, chestnut crown, and especially by having the wing-coverts brown with dusky centres, not uniform chestnut.

Range in Great Britain.—A very rare and occasional visitor, having once been taken near Brighton.

Range outside the British Islands.—Northern Russia, from the valley of the Dwina across Siberia to the Pacific; wintering in India, the Burmese countries, and China. In winter it has also occurred in most of the countries of Central Europe.

Habits.—Mr. Seebohm met with this Bunting on the Petchora river and again on the Yenesei. He says that it was extremely tame, and he found several nests. It is a very late visitor too in the north, arriving only in the early part of June, when it is common in the pine-woods and birch-forests. It has an "unobtrusive and quiet song." In winter, like other Buntings, it assembles in flocks.

Nest.—This is described by Mr. Seebohm as "a hole made in the dead leaves, moss, and grass, copiously and carefully lined with fine dead grass." Two other nests found by him were lined with reindeer-hair.

Eggs.—Three to five in number. Like miniature eggs of the Corn-Bunting, the ground-colour varying from stone-grey to pinkish-brown, with underlying grey markings, and conspicuous overlying spots and scribblings of purplish-black and reddish-brown. Axis, 0·7–0·8 inch; diam., 0·5–0·6.

THE RUSTIC BUNTING. EMBERIZA RUSTICA.

Emberiza rustica, Pall. Reise. Russ. Reichs., iii., p. 698 (1776); Newt. ed. Yarr., ii., p. 29 (1876); Dresser, B. Eur., iv., p. 229, pl. 219 (1877); B. O. U. List Br. B., p. 61 (1883); Seeb., Br. B., ii., p. 140 (1884); Sharpe, Cat. B. Brit. Mus., xii., p. 490 (1888); Saunders, Man., p. 207 (1889).

Adult Male.—Above chestnut, streaked with black, with ashy margins to the feathers; lesser wing-coverts chestnut; under surface of body white, with a chestnut band across the fore-neck, *the sides of the body also streaked with chestnut;* breast distinctly streaked; ear-coverts brown; a broad white eyebrow; base of chin black. Total length, 5 inches; culmen, 0·45; wing, 3·0; tail, 2·0; tarsus, 0·75.

In **winter** the whole colour of the bird is duller, the feathers being margined with buff, these pale edgings wearing off in spring, and leaving the breeding plumage in all its brilliancy.

Adult Female.—Duller in colour than the male, and lacking the rufous colour on the head and throat; lesser wing-coverts brown instead of chestnut; under surface of body buffy-white, the throat more isabelline. Total length, 5·5 inches; wing, 2·95.

Young.—Resembles the old female, but has the throat yellowish-buff, the fore-neck and chest streaked with blackish brown; wing-coverts edged with sandy-buff, and not tipped with white.

Range in Great Britain.—A rare and accidental visitor. Has occurred three or four times: near Brighton; in Yorkshire; and near London.

Range outside the British Islands.—A Siberian bird, extending to the Pacific, and wintering plentifully in China. In the winter it wanders westward, and has been taken in most of the countries of Europe. It occurs as far west as Finland up to 64° N. lat., near Archangel to 65°, in the Urals to 62°, and Mr. Seebohm met with it on the Yenesei at the same latitude.

Habits.—These are described as resembling those of the Reed-Bunting, the bird frequenting the marshy pine-woods of Northern Europe. It is said to have quite a melodious song.

Nest.—Described by Mr. Dresser as a carelessly-built structure, made entirely of fine wiry grass.

Eggs.—According to Mr. Dresser, these are like those of the Reed-Bunting, but the ground-colour is white, with a warm, almost reddish, tinge. The markings are redder than those of the above-named bird, bolder, and chiefly collected in a zone round the larger end of the egg. The two eggs in the Seebohm Collection from Archangel are greenish-white, mottled and clouded all over with greenish-brown, these mottlings distributed over the entire egg. Axis, 0·8 inch; diam., 0·6.

THE BLACK-HEADED BUNTING. EMBERIZA MELANOCEPHALA.

Emberiza melanocephala, Scop., Ann., i., p. 142 (1769); Dresser, B. Eur., iv., p. 151, pl. 206 (1872); B. O. U. List Br. B., p. 59 (1883); Seeb., Br. B., ii., p. 165 (1884); Sharpe, Cat. B. Br. Mus., xii., p. 503 (1888); Saunders, Man., p. 197 (1889).

Euspiza melanocephala, Newt. ed. Yarr., ii., p. 64 (1876).

Adult Male.—Light bay colour above, paler on the rump, which is orange-chestnut. A collar round the hind-neck, as well as the entire under surface, golden-yellow; *no streaks on the sides of the body;* upper mandible blackish; *head black,* no white eyebrow. Total length, 7 inches; culmen, 0·6; wing, 3·65; tail, 2·9; tarsus, 0·9.

In **winter** all the bright colours are obscured by ashy margins to the feathers, the black head and chestnut back being entirely hidden by these margins, which wear off in springtime.

Adult Female.—Differs from the male, and is much duller in colour. The sides of the body are not streaked, the bill is blackish (bluish-grey in life); rump with concealed chestnut markings; no black on the head; under tail-coverts yellow; abdomen isabelline. Total length, 6 inches; wing, 3·35.

Range in Great Britain.—A rare and accidental visitor. Has occurred three times: near Brighton; in Nottinghamshire; and in Scotland, near Dunfermline.

Range outside the British Islands.—From Italy to Greece and Turkey, eastward to Persia and the Caucasus, and wintering in the Indian Peninsula. Its migration is therefore strictly east and west. It arrives in South-eastern Europe at the end of April, and leaves again at the end of July or the beginning of August.

Habits.—According to Mr. Seebohm, who has studied the habits of the bird in Greece and Asia Minor, it is a thorough Bunting, and he gives some interesting notes on the species.

Nest.—Placed in a small bush or on the ground; a bulky structure, very rough outside, but neatly finished inside. "The main portion is constructed," writes Mr. Seebohm, "entirely of the yellow dry stalks of various small flowering-plants, the seed-capsules on which are the most prominent object and are conjoined with the stiffness of the stalks, which prevents them from bending easily; this gives the nest a very slender and unfinished look. The lining is of entirely different materials, brown instead of yellow, and consists of dry grass, roots, and slender stalks without any seed-capsules, with not unfrequently a final addition of goat's-hair, or a few horse-hairs."

Eggs.—Four to six in number. Ground-colour very pale, greenish-white, speckled with numerous dots of light brown, with overlying spots of reddish-brown, these spots generally distributed over the egg, but in some instances collecting at the larger end. Axis, 0·85–0·98; diam., 0·6–0·7.

THE YELLOW BUNTING. EMBERIZA CITRINELLA.

Emberiza citrinella, Linn., S. N., i., p. 309 (1766); Macg., Br. B., i., p. 445 (1837); Dresser, B. Eur., iv., p. 171, pl. 209 (1871); Newt. ed. Yarr., ii., p. 43 (1876); B. O. U. List Br. B., p. 60 (1883); Seeb., Br. B., ii., p. 160 (1884); Sharpe, Cat. B. Brit. Mus., xii., p. 515 (1888); Saunders, Man., p. 201 (1889); Wyatt, Br. B., pl. 17 (1894).

Adult Male.—Brown above, with black centres to the feathers; lower back and rump vinous-chestnut; under surface of body yellow, greener on the fore-neck and sides of neck; no stripes on the throat and breast, but the *flanks distinctly streaked with blackish-brown;* crown yellow, greenish on the sides; eyebrow yellow; *breast and sides of the body chestnut or bay.* Total length, 7 inches; culmen, 0·45; wings, 3·6; tail, 3·0; tarsus, 0·75.

In **winter** the colours are much duller, and the bright plumage, especially of the chestnut breast, is much obscured. In the spring the dusky edges gradually become abraded and wear off, so that the full plumage is gained without a moult.

Adult Female.—Never so brightly coloured as the male, and having the yellow on the crown concealed, and the throat and breast striped. Total length, 6·3; wing, 3·2.

Young.—Resembles the old female, but is very distinctly streaked below.

Range in Great Britain.—Universal, breeding everywhere, except in the Orkneys, where it is only known as a visitant.

Range outside the British Islands.—Generally resident throughout Central Europe, but a summer visitor in the northern portion of its range, which extends as far as 70° in Scandinavia, 65½° in Eastern Russia, and 64° on the River Ob. It reaches Turkestan to the eastward, but is only a winter visitor, as it is also to the greater part of Southern Europe.

Habits.—In England a very common and familiar bird, recognisable in every country lane and hedgerow by its somewhat monotonous note, which sounds like "a little bit of bread and—*nō chēēsē*." In winter it joins with the Chaffinches, Sparrows, and Greenfinches in the stubbles and farm-yards, and feeds largely on grain. The young birds, however, are entirely fed on insects and caterpillars.

Nest.—Generally placed on the ground, but occasionally in a gorse bush. It is composed of dry grass and bents, with a few twigs and rootlets and a little moss. It is lined with fine roots.

Eggs.—Four to six in number. From the curious "scribbling" on the eggs the Yellow Bunting, or "Yellow Hammer," as it is generally called,* is in many places known as the "Writing Lark." By this name it was always familiar to us in our school-days in Northamptonshire. Ground-colour of eggs varying from stone-grey to reddish- or pinkish-grey, or even white. The markings always irregular, no two eggs being exactly alike, sometimes with greyish underlying blotches, but generally very distinctly spotted and lined with overlying marks of purplish-brown. Axis, 0·75–0·97; diam., 0·6–0·75.

THE CIRL BUNTING. EMBERIZA CIRLUS.

Emberiza cirlus, Linn., S. N., i., p. 311 (1766); Macg., Br. B., i., p. 450 (1837); Dresser, B. Eur., iv., p. 177, pl. 210 (1871); Newt. ed. Yarr., ii., p. 50 (1876); B. O. U. List Br. B., p. 60 (1883); Seeb., Br. B., ii., p. 156 (1884); Sharpe, Cat. B. Brit. Mus., xii., p. 525 (1888); Saunders, Man., p. 203 (1889); Wyatt, Br. B., pl. 17 (1894).

Adult Male.—Somewhat resembles the Yellow Bunting, but is chestnut above, streaked with black. The breast is chestnut and the abdomen yellow, *the flanks streaked with blackish; lower back and rump olive-greenish*, streaked with dusky; head and hind-neck olive-green, streaked with black; eyebrow yellow; throat black, followed by a yellow patch. Total length, 5·5 inches; culmen, 0·45; wing, 3·9; tail, 2·45; tarsus, 0·65.

The **winter** plumage is duller, the feathers being edged with olive, and the summer plumage is attained by the gradual wearing off of the dull edges.

Adult Female.—Lacks the black and yellow markings on the face; the throat and breast striped; *lesser wing-coverts greenish-grey*, different from the back. This last feature will always distinguish it from the female Yellow Bunting.

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* If the vernacular name is to be employed, it should properly be Yellow *Ammer*, as it comes doubtless from the German word "Ammer," *a Bunting*.

Range in Great Britain.—Very local, and chiefly confined to the Southern Counties of England. Unknown in Ireland; only found as a rare straggler to Scotland. It has been known to breed as far north as Brecon, and in the Midlands, but further north it is only of accidental occurrence.

Range outside the British Islands.—Principally a western bird, and an inhabitant of Central and Southern Europe, extending east to Asia Minor, and breeding, it is said, as far east as the Crimea. It is also found in North Africa, and breeds there, but is principally known as a winter visitor.

Habits.—A much shyer and more woodland species than the Yellow Bunting, though its song is similar to that of the last-named bird, and its call-note is almost the same. There is, however, a difference in tone which can be detected by any-one accustomed to that of the Cirl Bunting, as the latter bird has not the prolonged final note of the Yellow Bunting. In autumn small flocks of the present species disperse themselves over the stubbles, in company with other Buntings and Finches, feeding, like the latter, on seeds and grain.

Nest.—A cup-shaped structure, made of roots and grasses, and lined with finer roots and leaves, with a little moss. Placed sometimes on the ground, like that of the Yellow Bunting, but is generally built in bushes, and sometimes at a height of six feet from the ground.

Eggs.—Four or five in number, very similar in character to those of the Yellow Bunting, but the ground-colour lighter, greyish or pinkish-white, and the lines and scribblings very distinct, purplish-black in colour, more pronounced, as a rule, than those of the Yellow Bunting. Axis, 0·8–0·85; diam., 0·6–0·7.

THE ORTOLAN BUNTING. EMBERIZA HORTULANA.

Emberiza hortulana, Linn., S. N., i., p. 309 (1766); Macg., Br. B., i., p. 457 (1837); Dresser, B. Eur., iv., p. 185, pl. 211 (1871); Newt. ed. Yarr., ii., p. 57 (1876); B. O. U. List Br. B., p. 61 (1883); Seeb., Br. B., ii., p. 153 (1884); Sharpe, Cat. B. Brit. Mus., xii., p. 530 (1888); Saunders, Man., p. 205 (1889).

Adult Male.—General colour above pale reddish-brown, with dusky streaks on the back and scapulars, less distinct on the lower back and rump; wing-coverts and quills blackish-brown, with rufous edges; head greenish-olive; lores yellowish; eyelid white; cheeks pale sulphur-yellow, separated from the throat by a distinct moustachial streak of dusky greenish-olive; *under surface of body cinnamon; throat olive-yellow, the chest more ashy; no streaks on the chest or the sides of the body; bill entirely red.* Total length, 6 inches; culmen, 0·5; wing, 3·35; tail, 2·5; tarsus, 0·75.

Adult Female.—Similar to the male, but paler in colour, the lower throat and fore-neck streaked with dark brown. Total length, 5·8 inches; wing, 3·2.

Young.—Like the adult female, but yellower below, without any tinge of fawn-colour; the throat, breast, and sides of body streaked with dark brown.

Range in Great Britain.—An occasional visitor, of which many specimens have been taken at different times.

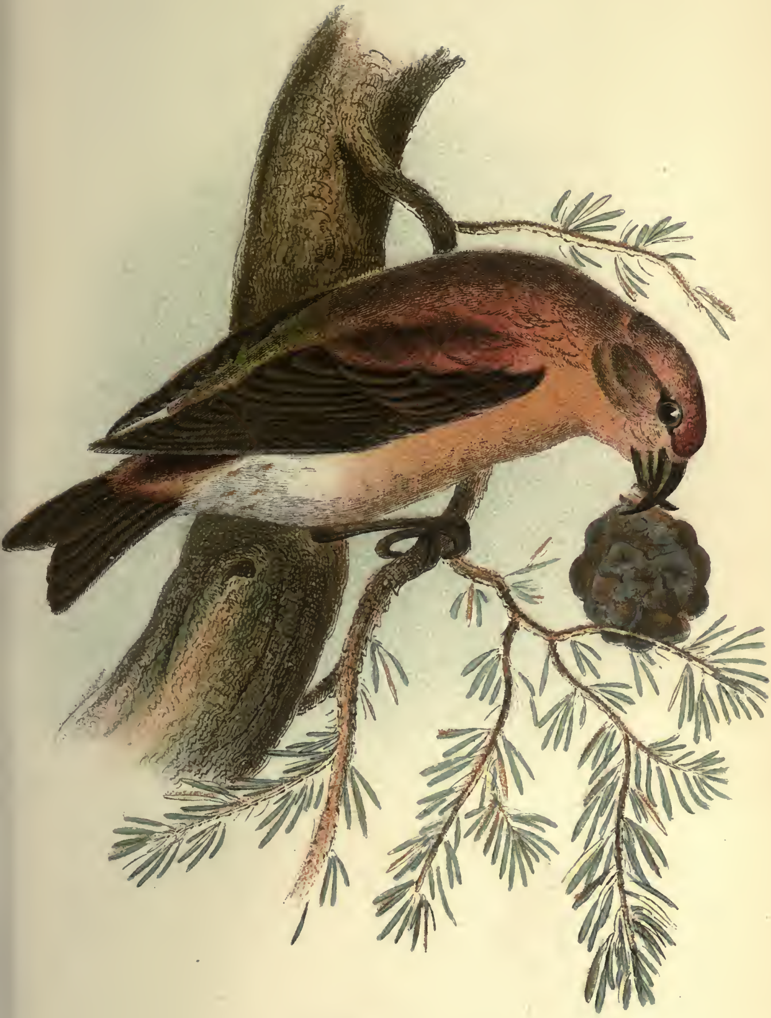
Range outside the British Islands.—Generally distributed over Europe, but mostly as a summer visitor. It occurs as far east as Central Asia, and the Altai Mountains, and its northern range reaches to the Arctic Circle in Scandinavia and to lat. 57° in the Ural Mountains. Its winter home is supposed to be Northern and North-eastern Africa, but little is really known about it, which is not a little curious, considering the number of the birds which come north to breed.

Habits.—A late arrival in the north of Europe, reaching its breeding haunts in the middle of May. It is not shy, according to Mr. Seebohm, who says: "It frequently remains for a very long time on the same twig, generally near the top of the tree, especially in the evening, when its simple song harmonises with the melancholy stillness of the outskirts of the country village. The song begins something like that of the Yellow Bunting, but ends quite differently. It may be roughly expressed by the words, '*tsee-ah, tsee-ah, tsee-ah, tyur-tyur.*' Sometimes there is only one '*tyur*' at the end. It seeks most of its food on the ground, where it hops with great ease, and probably picks up small seeds and insects of various kinds."

Nest.—On the ground; formed of roots and dry grass, and lined with fine roots and hair.

[illegible] INSTITUTION GLASGOW

PLATE IX



CROSSBILL.

Eggs.—Four to six in number. Ground-colour pinkish or greyish stone-colour, the underlying markings being grey and the overlying spots purplish-black. Writing lines are sometimes present, but never so strongly marked as in the eggs of the Yellow and Cirl Buntings. Axis, 0·75–0·8; diam., 0·55–0·65.

THE CORN-BUNTINGS. GENUS MILIARIA.

Miliaria, Brehm., Isis, 1828, p. 1278.

Type, *M. miliaria* (Linn.).

While the other Buntings are remarkable for somewhat variegated plumage, especially with respect to the tail-feathers, which generally have a patch of white on the outer ones, very conspicuous when the bird is flying, in the genus *Miliaria* the wing is shorter than the tail, and the inner secondaries are lengthened and nearly equal to the primary quills, like the wings of Larks and Wagtails. There is no white pattern on the tail. Only one species of *Miliaria* is known, the Corn-Bunting, which is singularly like a Lark in plumage.

THE CORN-BUNTING. MILIARIA MILIARIA.

Emberiza miliaria, Linn., S. N., i., p. 308 (1766); Macg., Br. B., i., p. 440 (1837); Dresser, B. Eur., iv., p. 163, pl. 208 (1871); Newt. ed. Yarr., ii., p. 38 (1876); B. O. U. List Br. B., p. 59 (1883); Seeb., Br. B., ii., p. 148 (1884); Saunders, Man., p. 199 (1889); Lilford, Col. Fig. Brit. B., pt. v. (1887); Wyatt, Br. B., pl. 17 (1894).

Miliaria miliaria, Sharpe, Cat. B. Brit. Mus., xii. p. 552 (1888).

Adult Male.—Above brown, with black centres to the feathers, less distinct on the lower back and rump; wing-coverts brown, with sandy-buff edges, whiter on the margins; head like the back, and similarly streaked; sides of neck ashy-white, streaked with black; tail-feathers brown, with a shade of ashy-white near the end of the inner web; cheeks and throat dull white, with a moustachial line of black spots; under surface of body dull white, with some triangular spots of black on the throat, more distinct on the fore-neck and breast, which are tinged with rufous-buff; sides of body browner and streaked with black; bill horn-brown, tinged with rufous, the lower mandible yellow; feet pale fleshy-brown; iris dark brown. Total length, 7·5 inches; culmen, 0·6; wing, 3·85; tail, 2·75; tarsus, 0·95.

Adult Female.—Similar to the male, but smaller. Total length, 6·5 inches; wing, 3·45.

In **winter** the general colour of the plumage is much more rufous.

Range in Great Britain.—Nearly universal, extending even to the Shetlands, but is somewhat local.

Range outside the British Islands.—Pretty generally distributed in Europe, but especially so in the southern and central parts of the Continent. Mr. Howard Saunders says that in the Spanish Peninsula and other great corn-producing countries of the south, as well as in North Africa and the Canaries, it is "resident and extremely numerous." It does not extend very high north, being only found in the south of Scandinavia, and thence its range tends south-eastwards, its most northern limit in Russia being the vicinity of Riga, and it is not known, according to Mr. Seebohm, to occur near Moscow or in the Urals. It is, however, found in the Caucasus, and its farthest eastern range is Bushire, in the Persian Gulf. Its supposed occurrence in Sind is not altogether authentic. The birds from the more eastern localities are paler in colour than those from Western Europe.

Habits.—The name of "Corn" Bunting for the present species is decidedly appropriate, at least as far as the south of England is concerned, for it is generally in the vicinity of corn land that the Bunting is observed. Its peculiar note attracts attention, as the bird sits on the top of a tree or bush, or, as is often the case, on a telegraph-wire. Beginning very much like that of the Yellow Bunting it trails off into a feeble ending, instead of the ascending note with which the last-named bird finishes its song. The Corn-Bunting is, to a certain extent, migratory, and flocks of the species are met with in winter.

Nest.—To be found towards the end of May, as the species is a late breeder. It is generally placed in a hollow in the the ground, generally in a corn-field, hidden under a tuft of grass or a small bush. It is an inartistic structure of bents or dry grass, or made only of rootlets, with a few finer grasses or hairs for lining.

Eggs.—Very handsomely marked and blotched with purplish-black, which takes the form of bold spots and scribblings, lines, and dashes. The ground-colour varies from stone-grey to creamy-white and purplish-brown, the underlying blotches being lilac or ashy-grey or even pinkish-grey. The overlying marks and lines are strongly pronounced, and are generally distributed over the whole egg, more rarely clustered round the larger end. Axis, 0·85–1·0 inch; diam., 0·7–0·75.

THE SNOW-BUNTINGS. GENUS PLECTROPHENAX.

Plectrophenax, Stejneger, Proc. U. S. Nat. Mus., v., p. 33 (1882).

Type, *P. nivalis* (Linn.).

The Snow-Buntings are easily recognised from the other Buntings by their long wings, which reach nearly to the end of the tail. The plumage of the adults is black and white. Two species of Snow-Bunting are known, one being our British bird, which inhabits the northern portions of the Old and New Worlds, and the other, *P. hyperboreus*, being found in Alaska only.

THE SNOW-BUNTING. PLECTROPHENAX NIVALIS.

(*Plate XI.*)

Emberiza nivalis, Linn., S. N., i., p. 308 (1766); Seeb., Br. B., ii., p. 125 (1884).

Plectrophanes nivalis, Macg., Br. B., i., p. 460 (1837); Dresser, B. Eur., iv., p. 261, pls. 224 and 225, fig. 2 (1873); Newt. ed. Yarr., ii., p. 1 (1876); B. O. U. List Br. B., p. 63 (1883); Lilford, Col. Fig. Br. B., pt. xvii. (1891).

Plectrophenax nivalis, Sharpe, Cat. B. Brit. Mus., xii., p. 572 (1888); Saunders, Man., p. 215 (1889).

Adult Male.—Black above; wing-coverts white; primary quills black, white at the base; tail black, the outer feathers white, with a small black mark at the end of the outer web; head and neck all round white, like the whole of the under surface; bill dull yellow, darker round the tip; feet black; iris dark brown. Total length, 7 inches; culmen, 0·5; wing, 4·45; tail, 2·7; tarsus, 0·85.

Adult Female.—Like the male, but not so black; the feathers mottled with greyish-white edges to the feathers; the crown slightly washed with fulvous; wing-coverts blackish-brown, tipped with white; bastard-wing, primary-coverts, and quills blackish-brown, edged with whitish; eyebrow and under surface of body dull white; the ear-coverts dull ashy; sides of upper breast ashy-brown. Total length, 6 inches; wing, 3·8.

In **winter**, when the Snow-Bunting is chiefly captured in England, the plumage is altogether more rufous or even chestnut, the paler edges to the feathers concealing the full plumage underneath. The summer dress is gained by the wearing off of the light margins to the feathers.

Range in Great Britain.—Chiefly known as a winter visitant, large flocks occurring on the eastern coast, especially in severe weather, when the Snow-Buntings are found some distance inland. Within the last ten years the species has been discovered to breed in Scotland, a nest having been taken in Sutherlandshire in 1888 by Messrs. Peach and Hinxman, and again by Mr. John Young in 1888, while in 1893 a nest was found in Banffshire by a party of naturalists. It had already been said to nest in Unst, the most northern of the Shetland Isles.

Range outside the British Islands.—The Snow-Bunting is an arctic bird, and has been found nesting in Grinnell Land by Colonel Feilden during the voyage of the "Alert" in lat. 82° 33′ N. It is a circumpolar species, being found in the Faeroes, Iceland, Novaya Zemlia, Spitzbergen, and also, as Mr. Seebohm says, "breeding on the tundras of the Arctic Regions, beyond the limit of forest growth." It also inhabits the arctic portions of North America, and migrates south in winter, reaching the Mediterranean countries in Europe, and Georgia, in the United States.

Habits.—Usually found frequenting the sea-shore or the adjacent lands. Here the birds keep in flocks, feeding on seeds, and are not very shy, their black and white plumage, however, rendering them always conspicuous. For the nesting season the flocks disperse, and the birds are only found in their breeding haunts in pairs, and an interesting account of the nesting of the species in different parts of Northern Europe and Siberia is given by Mr. Seebohm. On the Yenesei, "where there are no rocks," the nest was placed amongst the piles of driftwood near the shore; but in Banffshire the nest taken by Mr. Ogilvie Grant and his friends, Capt. Savile Reid, Mr. Eagle Clarke, and Mr. Hinxman, was in the face of a very wild "scree." Indeed, the general situation of the nest is in precipitous and rough ground on high mountains, where it is well concealed in a hole among the loose débris of rock. Such, at least, was the position of the Banffshire nest, which is now in the British Museum.

Nest.—Composed of grasses and twigs, with a little moss, and lined with hair and a few feathers. Colonel Feilden found a Snow-Bunting nest in the Arctic Regions, in close proximity to that of a Snowy Owl, some of whose feathers were used for lining the bird's nest.

Eggs.—Five to seven, but sometimes eight. The ground-colour varies from stone-grey to cream colour, and bluish- or greenish-white. The underlying blotches are lilac-grey or violet, with overlying spots or streaks of purplish-black. In this type the ground is greenish-blue, and the egg is very Finch-like. In another type the underlying blotches are reddish-grey, and the overlying markings and blotches are generally darker rufous. The eggs vary greatly, and embrace many different types and styles of coloration. Axis, 0·8–1·0 inch; diam., 0·6–0·7.

THE LONG-SPURRED BUNTINGS. GENUS CALCARIUS.

Calcarius, Bechst., Orn. Taschenb., p. 130 (1802).
Type, *C. lapponicus* (Linn.).

The Long-spurs, of which the Lapland Bunting is the type, are three in number, two of the species being North American —*C. ornatus* and *C. pictus*,—while the third, *C. lapponicus*, is an inhabitant of the northern portions of both hemispheres. The members of this genus may be recognised from all the other Emberizine genera by the length of the hind claw, which is longer than the hind toe itself.

THE LAPLAND BUNTING. CALCARIUS LAPPONICUS.

Fringilla lapponica, Linn., S. N., i., p. 317 (1766).
Plectrophanes lapponica, Macg., Br. B., i., p. 469 (1837).

Plectrophanes lapponicus, Dresser, B. Eur., iv., p. 223, pl. 253 (1872); Newt. ed. Yarr., ii., p. 15 (1876).

Calcarius lapponicus, B. O. U. List Br. B., p. 62 (1883); Sharpe, Cat. B. Brit. Mus., xii., p. 579 (1888); Saunders, Man., p. 213 (1889).

Emberiza lapponica, Seeb., Br. B., ii., p. 131 (1884); Lilford, Col. Fig. Br. B., pt. xvii. (1891).

Adult Male.—Above black, streaked with rufous or white; wing-feathers blackish, edged with whitish or pale rufous; tail-feathers the same, the outer one white, with a brown mark near the end of the outer web, the inner web also dusky near the base; *crown, sides of face, and throat black, with a broad collar of chestnut round the hind-neck and on the sides of the neck;* a creamy-buff eyebrow, and a broad line of white from the eyebrow down the sides of the neck to the sides of the breast, forming a patch on the latter; under surface of body creamy-white, with black stripes on the flanks; bill dull yellow, dusky at the tip; feet brownish-black; iris dark brown. Total length, 6 inches; culmen, 0·4; wing, 3·5; tail, 2·35; tarsus, 0·75.

Adult Female.—Differs from the male in wanting the black head and rufous collar on the neck. Total length, 5 inches; wing, 3·5.

In **winter** the entire plumage is obscured by sandy-rufous edges to the feathers, and the young birds which visit this country as a rule are in winter dress, and resemble the winter plumage of the old ones, but the general tone of the plumage is more buff, with the white patch on the sides of the neck visible, and the eyebrow also plainly marked.

Range in Great Britain.—An occasional visitor in autumn and winter, some fifty occurrences having now been recorded. These are principally from England; as for Scotland only two records have been noted, and for Ireland only one.

Range outside the British Islands.—Breeds in the high north of both hemispheres, being very common in the tundras or barren grounds of Siberia and North America. It likewise nests on the high mountain ranges of Norway, such as the Dovrefjeld. In winter it migrates south, and has been procured in nearly every country of Europe, though its visits rarely extend to those bordering the Mediterranean Sea.

Habits.—These are described by Mr. Seebohm as resembling those of the Snow-Bunting. It is equally gregarious, and has a somewhat similar song, generally delivered while the bird is soaring in the air like a Lark. The female has nearly as loud a song as the male.

Nest.—"Almost always placed in some hole in the side of one of the little mounds or tussocks which abound on the marshy part of the tundra; it is composed of dry grass and roots, and profusely lined with feathers." (*Seebohm.*)

Eggs.—Four to six in number. Egg very dark brown in appearance, the ground-colour olive or stone-brown, often uniform, with purplish-brown spots or streaks, and occasionally a few lines. Great variation is shown in the depth of the ground-colour, and in the amount of markings on the egg. Axis, 0·75–0·95 inch; diam., 0·6–0·65.

NOTE.—A specimen of Brandt's Siberian Bunting (*Emberiza cioides*) has been obtained in Yorkshire. Two specimens of the White-throated Bunting (*Zonotrichia albicollis*) have been recorded, one from the neighbourhood of Aberdeen, and another from Brighton; while the Painted Bunting (*Cyanospiza ciris*) was noted in 1802 as having been captured near Portland. This individual, as Mr. Howard Saunders well remarks, "Montagu, with his accustomed good sense, naturally presumed to have escaped from confinement." So many different kinds of foreign Finches are brought alive to England every year that it is devoutly to be hoped that in future the shooting of some of these aliens will not be deemed worthy of record in scientific journals, when it is so obvious that they must have been caged birds.

THE LARKS. FAMILY ALAUDIDÆ.

The Larks have been designated by Sundevall as *Scutelliplantares*, because the hinder aspect of the tarsus is *divided into scales like the front aspect.* In most Passerine birds the hinder portion of the tarsus is perfectly smooth, and not divided into scales. By these characters a Lark and a Pipit can be easily distinguished, for although our English Tit-larks or Pipits have much of the appearance and habits of a Lark (the Meadow-Pipit even having a Lark-like hind claw), yet they can be immediately told by the undivided scaling of the back of the tarsus, or *planta tarsi*, as it is called. The Larks have also ten primaries, but the first one is so short that very often only nine are apparent.

THE HORNED LARKS. GENUS OTOCORYS.

Otocorys, Bp. Nuovi Ann. Sci. Nat., Bologna, ii., p. 407 (1838).

Type, *O. alpestris* (Linn.).

In the birds of this genus the bill is short and stout like that of the Sky-larks, but they are at once recognised by the little tufts of black feathers, or hornlets, on each side of the hinder crown.

The Horned Larks are principally northern birds, occurring throughout the greater part of North America, where there are many kinds, one species also being found as far south as Colombia, in South America. Besides the species which visits England and which extends across Siberia, there are other forms which inhabit the deserts from Algeria to Central Asia and Mongolia, and more than one form of Horned Lark is found in the higher ranges of the Himalayas.

THE SHORE-LARK. OTOCORYS ALPESTRIS.

Alauda alpestris, Linn., S. N., i., p. 289 (1766); Macg., Br. B., ii., p. 159 (1839); Seeb., Br. B., ii., p. 284 (1884).

Otocorys alpestris, Newt. ed. Yarr., i., p. 604 (1874); Dresser, B. Eur., iv., p. 387, pl. 243 (1874); B. O. U. List Br. B., p. 73 (1883); Saunders, Man., p. 249 (1889); Sharpe, Cat. B. Brit. Mus., xiii., p. 541 (1890); Lilford, Col. Fig. Br. B., pt. xvi. (1890).

Adult Male.—Above ashy, with a tinge of vinous, the centre tail-feathers ashy, with black centres; the rest of the tail-feathers black, the outer one edged with white, the median and lesser wing-coverts vinous; remainder of wing-coverts and quills dusky brown, externally ashy with whitish margins, the inner coverts and secondaries browner; hinder crown and hind-neck pure vinous; *forehead and eyebrow* yellow or yellowish-white; across the crown *a broad band of black*, continued into the hornlet on each side of the hinder crown; throat pale sulphur-yellow; nasal plumes, lores, and fore part of ear-coverts

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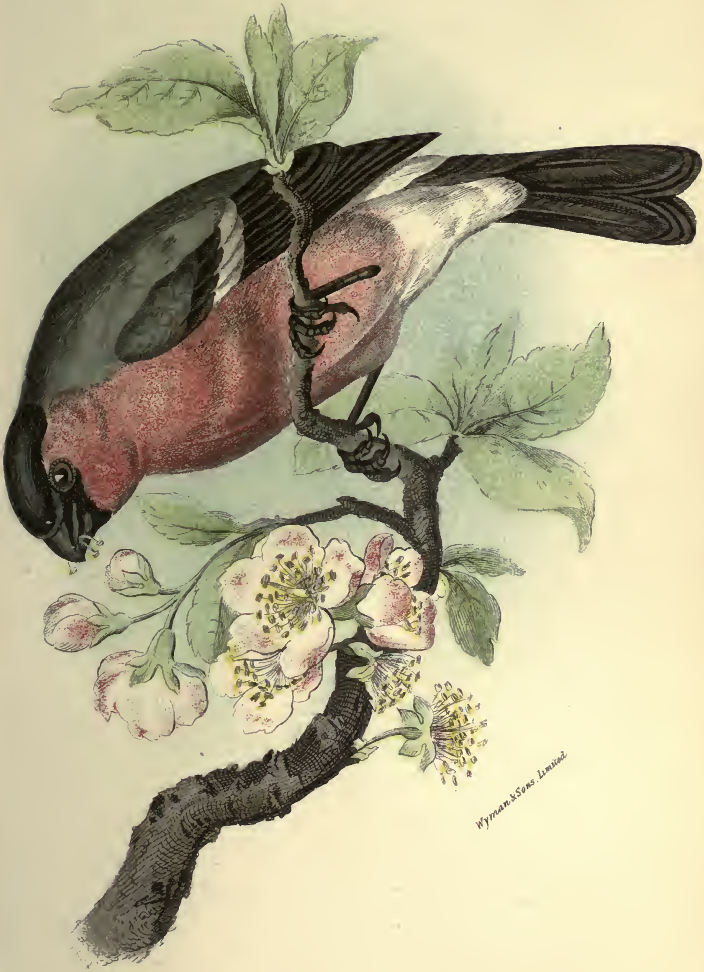
PLATE X.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black, the remainder of the ear-coverts yellowish-white, like the sides of the neck; across the lower throat and fore-neck *a broad band of black;* under surface of body white, the sides of the body and thighs vinous, slightly streaked with blackish; bill black, bluish-white at base of lesser mandible; feet brownish-black, tinged with grey; iris reddish-brown. Total length, 6·8 inches; culmen, 0·55; wing, 4·25; tail, 2·9; tarsus, 0·9.

Adult Female.—Forehead yellower than in the male, the black band on the crown not so strongly marked; hinder crown and nape browner, with less vinous tinge, mottled and streaked with black like the back.

Range in Great Britain.—A visitor in autumn and winter to the eastern coasts, and of pretty regular occurrence; it has also been noticed on the spring migration.

Range outside the British Islands.—A strictly northern bird, breeding beyond the limit of forest growth in Northern Europe and Siberia, and migrating south in winter. Also found across the high northern portions of America.

Habits.—Generally noticed in small parties on the sea-shore, where it picks up small molluscs, and feeds on the buds of small plants. In the summer the principal food consists of insects, but in the autumn it lives principally on seeds. Mr. Seebohm says that the Shore-Lark appears to be entirely a ground-bird, and often sings on the ground; but at its breeding places it sings incessantly, and mounts into the air like a Sky-Lark. The nest is placed on the ground, generally in some slight hollow.

Nest.—According to Mr. Seebohm, the nest is loosely made of dry grass and stalks, and the inside, which is rather deep, is lined with willow-down or reindeer-hair.

Eggs.—Three to five in number, more generally four. Ground-colour brown, thickly mottled with spots of darker brown distributed over the whole egg, and collecting in a broad ring round the larger end of the latter. This ring is generally very distinct, but is sometimes lighter, and occasionally absent altogether. Axis, 0·9–1·0 inch; diam., 0·6–0·65.

THE CALANDRA LARKS. GENUS MELANOCORYPHA.

Melanocorypha, Boie, Isis (1828), p. 322.

Type, *M. calandra* (Linn.).

The Larks composing this genus are birds of large size, and are peculiar to Southern Europe and the Mediterranean countries, extending eastwards to Southern Russia, and south to Abyssinia. Species of the genus are also found from Palestine and Asia Minor through Persia to Central Asia and North-western India, while some extend from the Eastern Himalayas to Thibet, and one at least inhabits Western Siberia and Northern China.

The Calandra Larks are generally recognised by their large size and very stout bills. The wing is more pointed than in the majority of the Larks, the secondaries not reaching to the tips of the primaries as in most of the members of this family.

The Calandra Lark of Southern Europe, *Melanocorypha calandra*, has been chronicled in some lists of British Birds on the strength of two specimens "recognised in the shops of bird-stuffers in Devonport and Exeter respectively; but the evidence is not sufficient to warrant the introduction to the British List of a species which is very tolerant of confinement, and is one of the commonest cage-birds in Spain and Italy." (*Howard Saunders.*)

THE WHITE-WINGED LARK. MELANOCORYPHA SIBIRICA.

Alauda sibirica, Gm., S. N., i., p. 799 (1788); Seeb., Br. B., ii., p. 279 (1884); Saunders, Man., p. 247 (1889).

Melanocorypha sibirica, Newt., ed. Yarr., i., p. 642 (1874); Dresser, B. Eur., iv., p. 373, pl. 240 (1873); B. O. U. List Br. B., p. 73 (1883); Sharpe, Cat. B. Brit. Mus., xiii., p. 557 (1890).

Melanocorypha leucoptera, Lilford, Col. Fig., Br. B., pt. xvi. (1890).

Adult Male.—Brown, streaked with black, the upper tail-coverts more rusty; *lesser wing-coverts and primary-coverts bright rusty-red, forming a shoulder patch;* remainder of wing-coverts and quills dark brown, with rust-coloured margins;

secondary quills white, with a black base; crown of head rusty-red; lores and eyebrow creamy white; ear-coverts rusty-red, the fore part white; under surface of body white, with a tinge of tawny colour on the thighs and sides of the breast, with a few dusky spots on the sides of the throat and fore-neck; sides of body streaked with dark brown; axillaries and under wing-coverts white. Total length, 7 inches; culmen, 0·55; wing, 4·7; tail, 2·5; tarsus, 0·9.

Adult Female.—Lacks the rufous crown, the head and ear-coverts being ashy brown, streaked with black like the back; the sides of face and throat more distinctly spotted with black than in the male. Total length, 6·8 inches; wing, 4·8.

Range in Great Britain.—An accidental visitor, one specimen having been caught near Brighton in November, 1869.

Range outside the British Islands.—An inhabitant of Central and Southern Russia, as far east as Central Asia, the Altai Mountains, and the Irtisch river. In winter it wanders occasionally west to Poland and Galicia, and has been procured in Heligoland, in Belgium, and in Northern Italy.

Habits.—In its native haunts it is a bird of the grassy and open districts, is said to be by no means shy, and has a song very like that of the Sky-Lark. Like the latter bird, it also ascends into the air for a short distance and sings during the breeding season. In the autumn these Larks collect in flocks.

Nest.—Built in a little cavity on the ground under a tuft of herbage or beneath a little bush, and is said to be made of grass.

Eggs.—Four or five in number. Ground-colour clay-white or greenish-white spotted all over with brown, with underlying spots of grey. Axis, 0·95 inch; diam., 0·65.

THE SKY-LARKS. GENUS ALAUDA.

Alauda, Linn., Syst. Nat., i., p. 287 (1766).
Type, *A. arvensis*, Linn.

The Sky-Larks are familiar birds and favourites in every country where they are found, and are in as much request as cage-birds in China as they are in this country, on account of their beautiful song. They are to be recognised from the other Larks of Great Britain by their tiny first primary quill (which looks like a little wing-covert), combined with a long and straight hind claw. The Sky-Larks are entirely birds of the Old World, and are found throughout Europe and Asia to China and the Indian Peninsula, but they do not extend to the Malayan Peninsula or the islands. One species is confined to Abyssinia.

THE SKY-LARK. ALAUDA ARVENSIS.

(*Plate XII.*, *Fig.* 1.)

Alauda arvensis, Linn., S. N., i., p. 287 (1766); Macg., Br. B., ii., p. 163 (1839); Dresser, B. Eur., iv., p. 307, pl. 231, (1871); Newt. ed. Yarr., i., p. 614 (1874); B. O. U. List Br. B., p. 71 (1883); Seeb. Br. B., ii., p. 266 (1884); Saunders, Man., p. 239 (1889); Sharpe, Cat. B. Brit. Mus., xiii., p. 567 (1890); Lilford, Col. Fig. Br. B., pt. xvi. (1890); Wyatt, Brit. B., pl. 24, fig. 2 (1894).

Adult Male.—Brown, streaked with black centres to the feathers, many of which are edged with grey; head like the back and crested; wing-coverts and quills dark brown, edged with tawny buff, the secondaries tipped with white; eyebrow isabelline; ear-coverts dark rufous, broadly streaked with black; under surface of body white, washed with tawny buff or rufous on the fore-neck, chest, and sides of body; the sides of the face and throat spotted with blackish, these markings longer and more distinct on the lower throat and chest, and developing into long streaks on the sides of the body; under wing-coverts and axillaries dark ashy isabelline; outer tail-feather white, except a wedge-shaped mark of brown at the base of the inner web; penultimate feathers white only on the outer web; bill greyish brown, yellowish at base of lower mandible; feet flesh-coloured, with a livid tinge; iris hazel. Total length, 7 inches; culmen, 0·55; wing, 4·35–4·55; tail, 2·8; tarsus, 1·0.

Adult Female.—Like the male in colour, *but smaller.* Wing from 3·9–4·2 inches in length.

NOTE.—The resident bird in many parts of England is very rufous in colour, much more so than the generality of Sky-Larks from other parts of Europe. The birds which migrate into England during the autumn are generally larger and much darker in colour.

Range in Great Britain.—Universally distributed, and resident everywhere except in the more northern portions, which it quits during the winter. A large migration of Larks takes place into England during the autumn.

Range outside the British Islands.—Generally distributed throughout Europe, where the form is identical with the general run of specimens from Great Britain; breeding as far as the Arctic circle or a little beyond; but only known as a winter visitant in the Mediterranean countries, where a paler and lighter form, generally called *A. cantarella*, takes the place of the true *Alauda arvensis*. This pale form extends to Central Asia and North-western India, while a more rufous race, known as *Alauda liopus*, inhabits the Himalayas, and extends to China and Japan. These races of Sky-Larks are scarcely worthy of separation from our British birds.

Habits.—These are almost too well known to need description, as the Sky-Lark is a general favourite with everyone, but especially when its bright song is heard in the spring and during the nesting season, when it soars into the air and sings at such a height as to be often almost invisible. In winter, when the home-bred birds are reinforced by a vast invasion of migratory Sky-Larks, they distribute themselves over the stubble-fields, and as they devour a great number of seeds of noxious weeds they doubtless render good service to the farmer, but they also pick out a considerable number of grains of newly-sown corn.

Nest.—Placed on the ground, generally on a level with the surface, a cup-shaped depression being scratched out by the bird for its reception. It is nearly always well concealed, and sometimes hidden under grass or a tuft of herbage. The nest itself is made of dry grass, lined with fine roots and grasses, with a little hair occasionally.

Eggs.—Three to five in number. Ground-colour greyish-brown or brownish-white, more rarely greenish-white, the eggs generally thickly clouded with brown and grey, the latter being the underlying colour, the brown overlying markings occurring in the form of spots and blotches, the larger end of the egg being generally uniform, and the dark colour forming a ring. Axis, 0·9–1·0 inch; diam., 0·6–0·7.

THE SHORT-TOED LARKS. GENUS CALANDRELLA.

Calandrella, Kaup., Nat. Syst., p. 39 (1829).

Type, *C. brachydactyla* (Leisl.).

Like the Sky-Larks, the members of this genus have a very rudimentary first primary, but they are distinguished from the species of *Alauda* by their smaller size, longer wings, and *curved* hind claw. As in *Alauda*, the secondary quills are as long as the primaries. Four species of true Short-toed Lark are known; the best-known form, *C. brachydactyla*, inhabiting Southern Europe across to Central Asia and North-western India, being replaced in the Indian peninsula by *C. dukhunensis*. *C. thibetana* inhabits the Himalayas and Thibet, while in Turkestan its place is taken by *C. acutirostris*. None of the Short-toed Larks exhibit a perceptible crest.

THE SHORT-TOED LARK. CALANDRELLA BRACHYDACTYLA.

Alauda brachydactyla, Leisler, Wetterau Gesellsch. Ann., iii., pp. 357–359 (1814); Seeb., Br. B., ii., p. 274 (1884); Saunders, Man., p. 244 (1889).

Calandrella brachydactyla, Dresser, B. Eur., iv., p. 341, pl. 235 (1873); Newt. ed. Yarr., i., p. 637 (1874); B. O. U. List Br. B., p. 72 (1883); Sharpe, Cat. B. Brit. Mus., xiii., p. 580 (1890); Lilford, Col. Fig. Br. B., pt. xvii. (1891).

Adult Male.—Of small size, and distinguished by the characters mentioned above. Sandy brown, with blackish centres to the feathers; those of the wing and tail dark brown, edged with sandy buff; the outer tail-feathers broadly margined with isabelline, inclining to sandy buff towards the end of the outer web and round the tip of the feather; outermost feather white, except for an oblique mark of blackish brown on the inner web, the white of the outer web tinged isabelline towards the end; head streaked like the back; under surface of body white, with a distinct wash of isabelline on the fore-neck, chest, and sides of body; on the former a few blackish spots; a blackish patch on the sides of the fore-neck; bill whity-brown, the culmen darker; feet pale yellowish-brown; iris brown. Total length, 5·5 inches; culmen, 0·45; wing, 3·45; tail, 2·05; tarsus, 0·75.

Adult Female.—Similar to the male, and not perceptibly smaller, as in most Larks; scarcely any streaks on the fore-neck, the blackish patch on the sides of the latter also smaller. Total length, 5·5 inches; wing, 3·6.

Range in Great Britain.—An accidental visitor, which has occurred about eight times in the southern half of England, and once, quite recently, in Ireland.

Range outside the British Islands.—A resident in many parts of Southern Europe, but migratory in others, departing in winter after nesting. It breeds in the south of France and throughout the Mediterranean countries, and as far east as Turkestan; but is only of accidental occurrence in Germany and other more northern countries of Europe, as in England.

Habits.—An inhabitant of sandy districts, where it lives entirely on the ground. It arrives in its breeding haunts about the beginning of April, and the eggs are found in May and June. Its song is like that of the Sky-Lark, but more feeble, and is uttered as the bird mounts into the air, though it also sings on the ground. It is of a very tame disposition, and during the winter congregates in large flocks.

Nest.—Placed on the ground in any kind of depression, such as a hoof-print, often concealed under the herbage. It is very like that of the Sky-Lark, being formed of dry grasses with vegetable down, and scantily lined with hair.

Eggs.—Four to five in number. There are two distinct types, one light, nearly uniform pale brown, the spots of brown very tiny and indistinct, sometimes showing a ring round the large and sometimes round the small end of the egg. The second type of egg is Sparrow-like, the ground-colour white, thickly spotted with brown, with underlying spots of grey. Axis, 0·75–0·8 inch; diam., 0·55–0·6 inch.

THE CRESTED LARKS. GENUS GALERITA.

Galerita, Boie, Isis, 1882, p. 321.

Type, *G. cristata* (Linn.).

The Crested Larks, of which we have two species in Europe, are distinguished by having the first primary quill well developed, the hind claw not as long as the bill, the latter being long and slender, and the crest very distinct, long, and narrow, and extending backwards in a point from the back of the head. Like the Sky-Larks, these birds vary greatly in the colour of the plumage according to the districts they inhabit, being paler in the desert countries. Four species are recognised, and the genus is found from Southern and Central Europe, across to Central Asia, and even to Northern China. Crested Larks also inhabit Abyssinia and the plains of Western Africa.

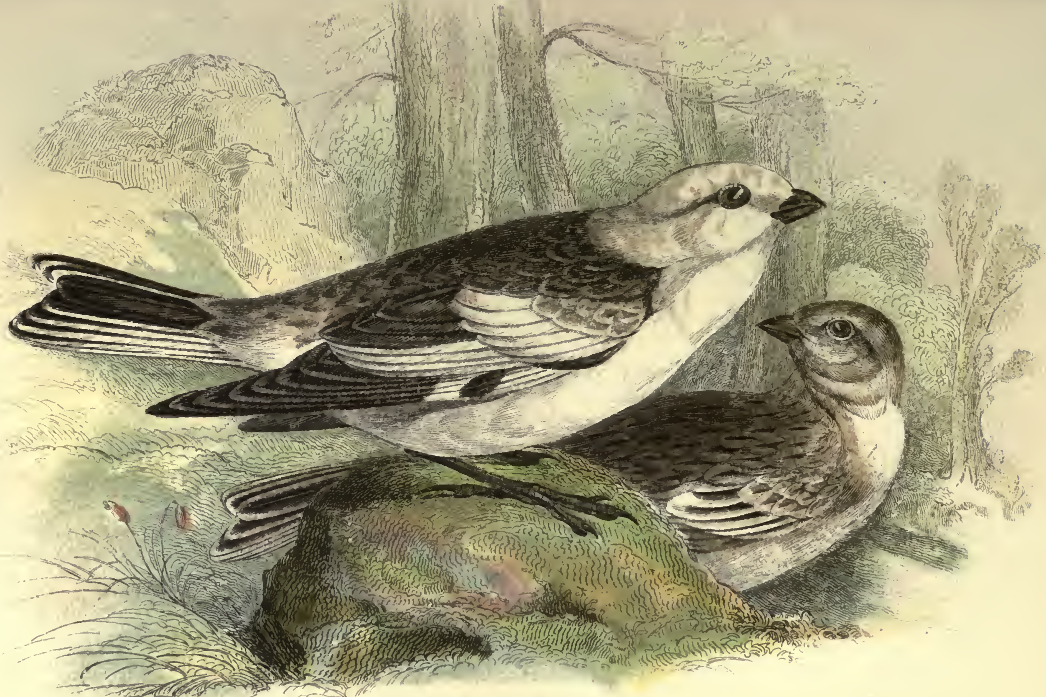
THE CRESTED LARK. GALERITA CRISTATA.

Alauda cristata, Linn., S. N., i., p. 288 (1766); Dresser, B. Eur., iv., p. 285, pls. 228-229 (1873); Newt. ed. Yarr., i., p. 632 (1874); B. O. U. List Br. B., p. 71 (1883); Seeb., Br. B., ii., p. 261 (1884); Saunders, Man., p. 243 (1889).
Galerita cristata, Sharpe, Cat. B. Brit. Mus., xiii., p. 626 (1890).

Adult Male.—Brown, streaked with blackish centres to the feathers; lower back and rump more uniform ashy-brown, inclining to vinaceous on the upper tail-coverts; wings brown, the feathers edged with ashy or rufous; tail-feathers brown, edged with ashy, the outer one pale brown sandy-buff externally, with an oblique dark mark on the inner web; crown of head streaked like the back, with a long median crest of pointed feathers; ear-coverts brown, with a whitish patch below the eye; cheeks and throat whitish, the former spotted with blackish; rest of under surface of body isabelline, the fore-neck and breast browner, the chest thickly spotted, and the sides of the body streaked with black; under wing-coverts and axillaries clear vinous isabelline; bill brown, paler on the lower mandible; feet dusky yellowish flesh-colour; iris light brown. Total length, 7 inches; culmen, 0·7; wing, 4·25; tail, 2·7; tarsus, 0·9.

Adult Female.—Like the male in colour, but smaller. Total length, 6·5 inches; wing, 3·8.

Range in Great Britain.—Although comparatively common on the Continent, the Crested Lark can only be considered a rare



SNOW BUNTING.

INSTITUTION
GLASGOW

and occasional visitor, about half-a-dozen authentic records of its capture being known in the southern half of England.

Range outside the British Islands.— An inhabitant chiefly of Central and Southern Europe, but resident in Scandinavia and Russia up to about 60 N. lat. It varies slightly in colour. The range of the ordinary Crested Lark follows the distribution given by us for the genus *Galerita*.

Habits.—More of a frequenter of towns and villages than the Sky-Lark, and often to be seen dusting itself in the roads in the villages of Central Europe. Otherwise its habits seem to be very similar to those of the Sky-Lark. It does not soar in the air when singing, like the latter bird, though Mr. Seebohm says that he has seen it make short excursions into the air like a Pipit. It does not collect in flocks in the autumn to any extent. Its food is similar to that of other Larks, consisting of seeds and grain in the autumn and winter, but chiefly of insects in the spring and summer.

Nest.—Placed on the ground, like that of other Larks, in a depression scratched out by the bird itself, or in a footprint; sometimes it is built in a wall of earth, or in the thatch of a low shed. It is composed of rootlets and dry grass, and is sometimes lined with a few hairs.

Eggs.— Four or five in number. Ground-colour light brown or ashy-white, with purplish-grey underlying spots or blotches, the overlying spots of brown being thickly distributed over the egg, appearing more distinct where the ground-colour is lighter. Axis, 0·9–1·0 inch; diam., 0·65–0·7.

THE WOOD-LARKS. GENUS LULLULA.

Lullula, Kaup., Natürl. Syst., p. 92 (1829).

Type, *L. arborea* (Linn.).

The Wood-Lark,—for there is only one species of the genus *Lullula*,—agrees with the Crested Lark, and differs from the Sky-Lark in having the first primary quill well developed; but it is distinguished from the Crested Lark by its much longer hind claw and by the shape of the crest, which is very full and rounded, not pointed, in shape.

THE WOOD-LARK. LULLULA ARBOREA.

(*Plate XII., Fig.* 2.)

Alauda arborea, Linn., S. N., i., p. 287 (1766); Macg., Br. B., ii., p. 174 (1839); Dresser, B. Eur., iv., p. 321, pl. 232 (1872); Newt. ed. Yarr., i., p. 625 (1874); B. O. U. List Br. B., p. 71 (1883); Seeb., Br. B., ii., p. 256 (1884); Lilford, Col. Fig. Br. B., pt. iv. (1887); Saunders, Man., p. 241 (1889); Wyatt, Brit. B., pl. 24, fig. 1 (1894).
Lullula arborea, Sharpe, Cat. B. Brit. Mus., xiii., p. 636 (1890).

Adult Male.— Sandy rufous, broadly streaked with black, except on the mantle, where the streaks are less distinct and the colour is rather paler; lower back and rump ashy brown, with a reddish tinge on the upper tail-coverts; wing-coverts dark brown, margined with rufous; primary coverts black, tipped with whitish, and forming a distinct patch on the wing; tail-feathers black, with a triangular white spot at the ends, the outer feather smoky brown, with an oblique black mark on the inner web; crown sandy buff, streaked with black, a broad line of white over the eye nearly meeting on the hinder crown; ear-coverts rufous, with a dark brown upper edge; under surface of body white, the breast and abdomen tinged with yellow; throat, fore-neck, and chest, as well as the sides of the body, streaked with black; flanks brown; axillaries and under wing-coverts leaden grey. Total length, 5·5 inches; culmen, 0·5; wing, 3·65; tail, 1·9; tarsus, 0·8.

Adult Female.—Similar in colour to the male and equal in size. Wing, 3·6–3·8.

Range in Great Britain.—A decidedly local bird, more plentiful in the Southern Counties of England, and decreasing in numbers towards the north, though it has been found breeding in Stirlingshire by Mr. Harvie-Brown. In other parts of Scotland it is only known as a migrant. It is resident in Ireland in a few places only.

Range outside the British Islands.—Found generally throughout Europe, and as far east as Persia, but does not extend very far north, reaching to about 60 N. lat. in Scandinavia and Western Russia and the valley of the Volga in Eastern Russia, according to Mr. Seebohm. In the Mediterranean countries it is chiefly known as a winter visitor.

Habits.—As its name implies, this species is a more woodland bird than the other British Larks, and in many of its ways of life it resembles the Tree Pipit, frequenting the neighbourhood of woods and plantations, but always affecting trees. On these it loves to sit, and from them it takes flights into the air, singing all the while. Its note is considered superior to that of the Sky-Lark, but like that bird it often sings when on the ground, on which it is thoroughly at home, and on which it roosts.

Nest.—Placed on the ground, and skilfully concealed under a tuft of herbage or a small bush. It resembles the nest of the Sky-Lark, but is rather more firmly put together. It is composed of dry grass and fine rootlets, and is lined with finer grass with a little hair.

Eggs.—Four or five in number. Pale in colour for those of a Lark, though darker examples are not wanting in a large series ; often very rounded in shape. Ground-colour white or reddish-white, numerously dotted with fine spots, reddish-brown, with indistinct underlying spots of grey. In some specimens the spots are clouded at the larger end, and form a ring. Axis, 0·8–0·9 inch ; diam., 0·6–0·75.

THE WAGTAILS AND PIPITS. FAMILY MOTACILLIDÆ.

In this family are included the Wagtails and Pipits, birds which are intermediate in character between the Larks and the Warblers. They have a single-plated tarsus like the latter birds, but they have the same shaped wings as the Larks, the inner secondaries being about as long as the primary-quills. Like the Larks, too, they run on the ground, do not hop, and the nesting habits, especially those of the Pipits, are very similar to those of the Larks, even to the colouring of the eggs.

Wagtails are found in every part of the Old World, excepting Australia and Oceania. One species, *M. flava*, even extends to Alaska. They breed, as a rule, in the northern portions of

Europe and Asia, and migrate south in winter to Africa, India, China, and the Malayan peninsula and islands.

THE WAGTAILS. GENUS MOTACILLA.

Motacilla, Linn. Syst. Nat., i., p. 328 (1766).

Type, *M. alba*, Linn.

These birds get their popular name from the curious dipping motion of the tail, which accompanies every movement of the body. They are divisible into two groups, the "Pied" and "Yellow" Wagtails, or "Water" and "Field" Wagtails, most of the water-loving species being black-and-white or grey, and the field-frequenting species belonging to the yellow group. No structural characters, however, can be found to divide these two sections of the genus *Motacilla*, and we have, therefore, included all the species under one generic heading.

Of the black-and-white Wagtails fourteen species are known, and they are more or less migratory. This is certainly the case with the species which breed in northern latitudes, but there are at least three species peculiar to Africa, and two to India. Representing our European Wagtails, *M. lugubris* and *M. alba* in Eastern Asia, breeding in the north, and migrating south in winter, are three species, *M. ocularis*, *M. lugens*, *M. leucopsis;* these are all birds of the Manchurian subregion, to which geographical area, a fourth species, *M. grandis*, seems to be confined. As is the case with the Yellow Wagtails, there is, among the Pied section of the genus, a tendency to found isolated colonies; hence we find in Persia a race of the White Wagtail, which has been called *M. persica*, while in Central Siberia there is another race, which is known as *M. baicalensis*, from its having first been noticed near Lake Baikal.

The Wagtail of Madagascar, *M. flaviventris*, and the Grey Wagtail of Europe, *M. melanope*, are "Water" Wagtails, with the colouring of Yellow Wagtails. Nearly every one of the latter come northward and breed every season, and retire south in winter. The Black-headed Yellow Wagtail, *M. feldeggii*, is perhaps the one which wanders least, and its two races, *M. paradoxa*, from South-eastern Europe, and *M. xanthophrys*, from Lenkoran, have a very limited range.

THE PIED WAGTAIL. MOTACILLA LUGUBRIS.

Motacilla lugubris, Temm. Man. d'Orn., i., p. 253 (1820); Newt. ed. Yarr., i., p. 538 (1874); Dresser, B. Eur., iii, p. 239, pls. 125, fig. 3, 126, fig. 2 (1875); B. O. U. List Br. B., p. 30 (1883); Sharpe, Cat. B. Brit. Mus., x., p. 460 (1885); Saunders, Man., p. 113 (1889); Wyatt, Br. B., pl. 8, fig. 3 (1894).

Motacilla yarrelli, Macg., Br. B., ii., p. 225 (1839); Seeb., Br. B., ii., p. 194 (1884); Lilford, Col. Fig. Br. B. pt., viii. (1888).

Adult Male in Summer Plumage.—Black above; throat and fore-neck black; ear-coverts white; breast and abdomen as well as under tail-coverts white; the sides of the body ashy-grey; median and greater wing-coverts black, externally margined with white; quills black, edged with grey, the inner secondaries with white; tail-feathers black, the two outer ones white, black at the base and along the edge of the inner web; bill and feet black; iris dark brown. Total length, 7·3 inches; culmen, 0 6; wing, 3·55; tail, 3·7; tarsus, 0·95.

Adult Female.—Like the male, but never so entirely black on the body, the latter being dingy grey, more or less mottled with black feathers. Total length, 6·8 inches; wing, 3·25.

Adults in Winter Plumage.—Easily distinguished by the white throat, which is followed by a black band across the fore-neck, extending in a crescent up to the ear-coverts; the back is grey, with the forehead white, and the hinder crown and nape black.

Young Birds have at first the head grey like the back. After the first moult they resemble the winter plumage of the adults, being dull ashy, with a white forehead, and a black patch on the hinder crown, as well as a black patch on the fore-neck. There is almost invariably a tinge of sulphur-yellow pervading the white on the sides of the face and neck. The method by which the black throat is assumed is curious, as it is chiefly acquired by a change in the colour of the feather, rather than by a complete moult. The white feathers of the winter dress become black at their tips, and this black gradually spreads over the whole of the feather, until the entire throat becomes black. We were at one time inclined to believe that there was no spring moult at all, at least, in the old birds, but we have seen some specimens which induce us to believe that there is a partial spring moult in all Wagtails and Pipits, and that some of the black throat-feathers in the former are really assumed by a direct moult. That the Tree-Pipit moults in spring we have proved by a pair of birds which we kept through the winter (*vide infrà*, p. 105).

Range in Great Britain.—A resident, and breeding over the greater portion of our islands, but not remaining during the winter in the more northern parts. Although nesting in small numbers in the Orkneys and some of the Hebrides, it is only a spring and autumn migrant in the Shetland Islands. In most places a certain amount of migration takes place, and many of our Pied Wagtails leave the country, but in many parts of England the species remains through the winter.

Range outside the British Islands.—The Pied Wagtail is peculiarly a species of Western Europe. It breeds in the north-west of France, and sparingly in Holland, but in Belgium it appears to be only an accidental visitor. It likewise visits Denmark, passes over Heligoland, sometimes in some numbers, and breeds in South-western Norway. It is a winter visitor to Southern France, Spain, extending to Morocco, and has occured as a straggler in Italy.

Habits.—This very graceful little bird is familiar to most people, and in many parts of the country it is called a "Dish-washer." Its name of Wagtail is gained from the graceful way in which it balances and sways its tail up and down, with every movement. The flight of the species is undulating, and consists of a series of dips through the air, each dip being accompanied by an utterance of its call-note, which is very well imitated by the words *chiz-zit*. During the nesting season the Wagtail is very tame and trustful, nesting often in the neighbourhood of habitations in the most easily detected places. At Cookham in our young days we often found the nest in the large rustic flower-baskets on the lawn, a little depression being scraped in the mould and the nest placed therein. It was difficult to preserve the birds from prowling cats, but a still more relentless enemy was the Cuckoo, which seemed always to select a Wagtail's nest in which to deposit its eggs. The food of the Wagtail consists entirely of insects, in the pursuit of which it is untiring, running about with the greatest swiftness on the lawn or pasture, or chasing them by the river's bank.

Nest.—Placed in the hole of a bank or building, among roots of trees or even in the stems of an old ivy-tree, growing against a wall. The nest is a very rough structure outside, made of grass, roots, and moss, but neatly lined with hair, wool, and some feathers.

Eggs.—Four to six in number. Ground-colour bluish-white or stone-grey, numerously spotted all over with minute dots of purplish-brown, sometimes collecting near the larger end, but generally scattered over the egg. The underlying marks are purplish-grey, very inconspicuous as a rule, but occasionally causing a blotch. On one specimen in the British Museum the underlying markings are very distinct, and form irregular blotches of a light-brown colour, with streaks and hair-lines of blackish brown. Axis, 0·75–0·9 inch; diam., 0·6.

THE WHITE WAGTAIL. MOTACILLA ALBA.

Motacilla alba, Linn., S. N., i., p. 331 (1766); Macg., Br. B., ii., p. 221 (1839); Newt. ed. Yarr., i., p. 548 (1874); Dresser, B. Eur., iii., p. 233, pl. 125 (1875); B. O. U. List Br. B., p. 29 (1883); Seeb., Br. B., ii., p. 199 (1884); Sharpe, Cat. B. Brit. Mus., x., p. 464 (1885); Lilford, Col. Fig. Br. B., pt. viii. (1888); Saunders, Man., p. 115 (1889).

Adult Male in Breeding Plumage.—Grey, *not black*, above; throat and fore-neck black; ear-coverts white; wing-coverts edged with white, with black bases; head and nape black; forehead white; under surface of body white, the sides light ashy-grey; bill and feet black; iris light brown. Total length, 6·7 inches; culmen, 0·5; wing, 3·35; tail, 3·35; tarsus, 0·85.

Adult Female.—Similar to the male, but the black on the crown generally not so strongly marked, being mixed with ashy. Tolal length, 6·8 inches; wing, 3·3.

Adults in Winter Plumage.—Distinguished by the white throat, followed by a crescentic band of black on the fore-neck; the back grey, with a white forehead, followed by a black patch on the crown.

Young.—At first recognisable by having the forehead and crown of head grey like the body, and a tinge of yellow on the throat; the fore-neck and chest dull ashy with a dusky spot on the former. After the first moult the young birds may still be recognised by the yellow tinge on the white throat; the head is grey like the body, but the forehead is white.

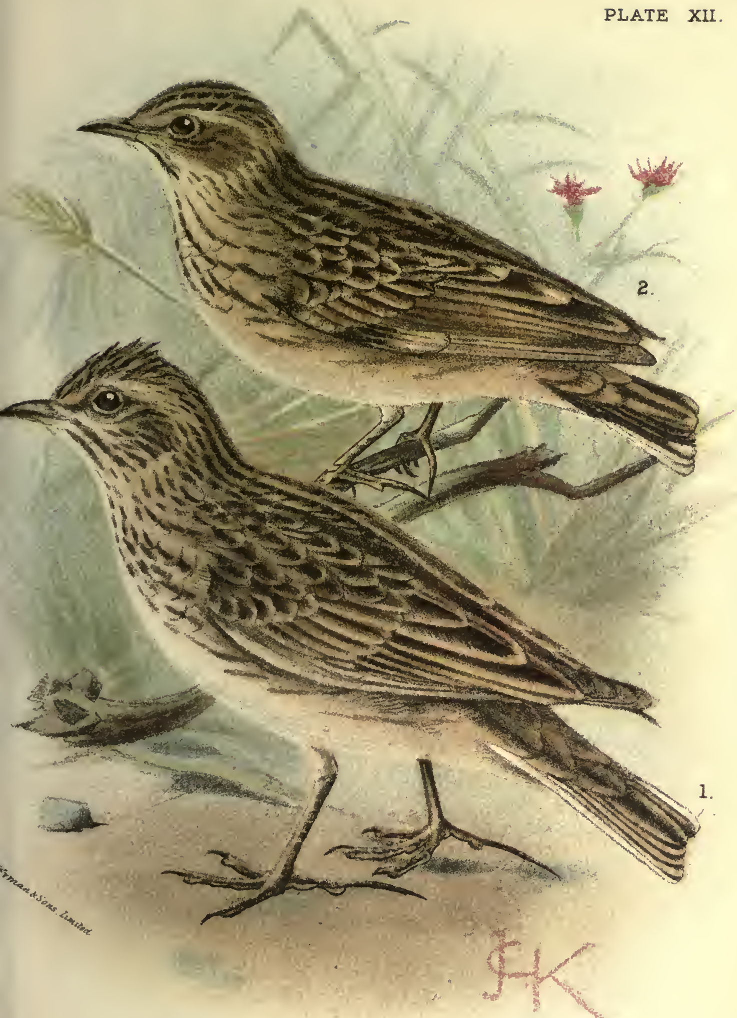
The White Wagtail may always be distinguished from the Pied Wagtail in summer by its pure grey back, which contrasts with the black head, whereas in the latter species both head and back are black. The female of the White Wagtail has a pure grey back like the male, whereas there is always some admixture of black in the back of the Pied Wagtail, though the female is never so entirely black as the male. In winter the two species are more difficult to distinguish, especially as the young birds of both have a grey back like the adults, but at all ages the greater amount of white on the wing-coverts serves to denote a White Wagtail.

Range in Great Britain.—A regular visitant in spring, and has been identified as nesting in the British Islands on several occasions. It has doubtless often been confounded with the Pied Wagtail, and is probably more common than is supposed. It has been noticed in many parts of Scotland, and on one or two occasions the late Mr. E. T. Booth observed it in some abundance in the island of Lewis and near Inverness. It is probably a regular visitor in autumn on its way south, as in 1890, and again in 1891, a White Wagtail frequented the lawn of our house at Chiswick, appearing in October for two years in succession, and remaining for two or three days in the neighbourhood.

Range outside the British Islands.—A more eastern bird than the Pied Wagtail, but found along with the latter bird in its winter home in the South of France. It goes much further south than *M. lugubris*, and winters in Senegambia and North-eastern Africa. The White Wagtail also goes further to the northward to breed than does its congener, being found throughout Europe and extending to Iceland and the Faeroes in summer, and even reaching Jan Mayen and South Greenland. Its breeding quarters extend into Siberia to the valley of the Yenesei, and it winters in the plains of North-western India and the Burmese countries.

INSTITUTION

PLATE XII.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1. SKY-LARK. 2. WOOD-LARK.

Habits.—These are, as might be expected, very similar to those of *M. lugubris*, and, like that species, the White Wagtail is a very lively and active little bird, pursuing insects with the same elastic and rapid movements.

Nest.—Similar to that of the Pied Wagtail, with which species it certainly interbreeds on certain occasions. In the western corridor at the British Museum (N.H.) can be seen a Wagtail's nest sent by Lord Walsingham, and procured by his keeper in Norfolk. The male bird is undoubtedly a White Wagtail, while the female is a Pied Wagtail, and a second instance of such interbreeding has been noticed by Dr. Günther in Suffolk.

Eggs.—Five to six. Generally indistinguishable from those of *M. lugubris*, but in the Seebohm collection in the British Museum are some very curious variations in markings. The ground colour is decidedly more bluish-white than in eggs of *M. lugubris*, and the same styles of eggs with the stone-grey ground and the fine specklings, which are seen in the latter species, are also frequent in a series of eggs of *M. alba*. There is, however, in the latter species an occasional tendency to produce a brownish egg, wherein the ground-colour is dull white, almost entirely hidden by marblings and spots of light brown or reddish-brown, especially marked in a clutch taken by Mr. Seebohm in the Petchora Valley, and again distinct in another clutch from Valkensvaard in Holland, but in the latter case the markings are not so strongly exemplified. One egg in the British Museum, from Holland, is white with the large end black, an unusual variation in a Wagtail's egg. Axis, 0·8–0·9 inch; diam., 0·6–0·65.

THE GREY WAGTAIL. MOTACILLA MELANOPE.

(*Plate XIII.*)

Motacilla melanope, Pall. Reise. Russ. Reichs, iii., App., p. 696 (1776); Dresser, B. Eur., iii., p. 251, pl. 128 (1875); B. O. U. List Br. B., p. 30 (1883); Sharpe, Cat. B. Brit. Mus., x., p. 497 (1885); Saunders, Man., p. 117 (1889); Wyatt, Br. B., pl. 8, figs. 1, 2 (1894).

Motacilla boarula, Macg., Br. B., ii., p. 235 (1839).

Motacilla sulphurea, Newt. ed. Yarr., i., p. 552 (1874); Seeb., Br. B., ii., p. 203 (1884); Lilford, Col. Fig. Brit. B., pt. vi. (1888).

Adult Male in Summer Plumage.—Above blue-grey, the lower rump and upper tail-coverts brighter yellow; breast yellow, the under tail-coverts brilliant yellow; throat black, with a white moustachial streak on each side; wing-feathers dusky brown, edged with ashy olive, the inner secondaries dull white near the base of the outer web, forming a wing-patch; bill black; feet blackish; iris dark brown. Total length, 6·8 inches; culmen, 0·55; wing, 3·25; tail, 3·55; tarsus, 0·75.

Adult Female.—Similar to the male, but with less black on the throat, the feathers edged with hoary white. Total length, 7 inches; culmen, 0·6; wing, 3·25; tail, 3·8; tarsus, 0·8.

Winter Plumage.—Similar to the summer plumage, but with the throat white.

Young Birds.—Like the adults in their winter dress, but with a wash of pale fawn-colour on the cheeks, throat, and fore-neck; a fawn-coloured eyebrow.

Range in Great Britain.—Somewhat locally distributed, and breeding more particularly in the mountainous and hilly portions of the British Islands. In the southern counties it is chiefly known as an autumn migrant, frequenting streams, but it also breeds in the south, regularly in the south-western districts, more sparingly in the south-eastern parts of the country.

Range outside the British Islands.—A bird of very wide distribution, extending throughout Europe and Asia to the Pacific, but not extending very high north, nor reaching beyond Central Russia, and only found in the extreme south of Scandinavia. In the countries of Southern Europe it is a resident, but is migratory in the more northern parts of its range, and it visits in winter the high mountain ranges of North-eastern and Central Africa, the peninsula of India, the Burmese countries, and extends into the Molucca Islands.

Habits.—Although coloured like the Field Wagtails, the present species is a "Water" Wagtail in its habits, and is generally found in autumn along the sides of rivers and ponds in the south of England, where many winter. Their movements and ways of capturing insects are the same as those of the preceding species. It is a more shy and retiring bird than the Pied Wagtail, and is a somewhat early breeder, as we have known the young to be on the wing in the early part of May.

Nest.—Resembles that of the Pied Wagtail, but generally to be found near a stream, built on the bank under a shelf of rock, and generally well concealed by the surrounding herbage. We found a nest for three years in succession in some ivy-covered trellis-work which grew over a disused bath-house at Avington Park, and Mr. Seebohm states that he once saw a nest built in the fork of three stems of an alder-tree, close to the ground, almost overhanging the water. The same observer remarks that he has found the nest lined with cow-hair, the preference being given to white, and he observed the same habits in Greece, the inner lining of the nest being made of white goats' hair in the last-named country.

Eggs.—Generally five, but occasionally as many as seven. In colour they vary considerably, the ground-tint being more olive than in the two foregoing species. Occasionally there is an approach to the markings and specklings of the White Wagtail, but as a rule the tendency in the Grey Wagtail's egg is towards uniformity, one clutch procured by Mr. R. J. Ussher, in co. Waterford, being nearly uniform bluish-white, with only the faintest indications of rufous mottlings. Another clutch taken by the same gentleman is bluish-white, handsomely mottled and spotted with rufous-brown and with grey underlying blotches and spots. As a rule the colour of each clutch of eggs is the same in character, but occasionally there is some variation in this respect, a clutch of four from the Vosges Mountains having two of the eggs nearly uniform pale olive, while the others are thickly spotted and blotched with pale brown, so that the olive ground-colour is all but concealed. Axis, 0·75–0·8 inch; diam., 0·55. (Plate xxxi., fig. 3.)

THE YELLOW WAGTAIL. MOTACILLA CAMPESTRIS.

Motacilla campestris, Pall. Reis. Russ. Reichs, iii., Anhang, p. 697 (1776); Sharpe, Cat. B. Brit. Mus., x., p. 510, pl. vi., figs. 1, 2 (1885).

Budytes rayi, Macg., Br. B., ii., p. 212 (1839).
Motacilla rayi, Newt. ed. Yarr., i., p. 564 (1874).
Motacilla raii, Dresser, B. Eur., iii., p. 277, pl. 131 (1875); B. O. U. List. Br. B., p. 31 (1883); Seeb., Br. B., ii., p. 212 (1884); Lilford, Col. Fig. Br. B., pt. vi. (1888); Saunders, Man., p. 121 (1889).

Adult Male in Breeding Plumage.—General colour olive-yellow above, and bright yellow below; the under tail-coverts bright yellow like the breast; head also bright yellow, as well as the eyebrow, the hinder crown like the back. Total length, 6·3 inches; culmen, 0·5; wing, 3·15; tail, 2·7; tarsus, 0·9.

Adult Female.—Similar to the male, but not so bright in colour, and having the forehead greenish like the head, instead of being bright yellow as in the male.

Adults in Winter Plumage.—Greener than in summer, the forehead like the rest of the upper parts: a broad yellow eyebrow, ear-coverts greenish; under-surface of body yellow, with a slight tinge of saffron on the breast.

Young Birds.—Olive-brown above, more yellow on the lower back and upper tail-coverts; a broad eyebrow of pale fawn-colour; ear-coverts brown; chin and cheeks whitish; throat and chest pale fawn-colour, with dusky spots on the latter; lower flanks, abdomen, thighs, and under tail-coverts, bright yellow.

Range in Great Britain.—A summer visitor only, breeding in most parts of England and the south of Scotland, as well as near Lough Neagh and the neighbourhood of Dublin in Ireland. It is not known to breed west of Somersetshire, and occurs only on migration in our south-western counties. In spring and autumn it is a very common migrant on the lands near the coast.

Range outside the British Islands. — The Yellow Wagtail is chiefly a western bird, nesting in the north of France, but elsewhere only known as a migrant on its way to or from its winter home in Western Africa. Specimens have been sent from the Zambesi and the Transvaal, but these may be migrants from Turkestan or Southern Russia, where the Yellow Wagtail is also found, and it is most probable that the line of southern migration of the Russian birds would be along the line of Eastern Africa.

Habits.—The present bird is more of a "Field" Wagtail than any of the foregoing species, and on its arrival in spring, often as early as March, it frequents the land by the sea-shore, assembling in the pastures in small flocks, and attracting attention by its brilliant yellow plumage, which rivals that of a Canary. For some time after its arrival inland the flocks keep together in the pastures, before they break up into pairs for the nesting season. In the autumn these Yellow Wagtails also assemble in flocks in the pasture lands near the sea-shore, feeding generally round the cattle, and catching the insects disturbed by the latter, in the usual graceful manner of Wagtails. At night they retire to roost in the neighbouring reed-beds in large numbers.

Nest.—On the ground, well-concealed, built under a turf or stone, sometimes in a bank. It is composed of rootlets or dry grass, and Mr. Cullingford informed Mr. Seebohm that the materials varied greatly, the lining consisting sometimes of hair, at other times of feathers or roots.

Eggs.—Four to six in number. They vary extremely in colour and markings. Some are uniform pale olive-brown, some darker olive, while others are nearly uniform pinkish-brown. Another type resembles the greenish-olive egg of the Sedge-Warbler, and even has an occasional hair-line of black, as is so often seen in the eggs of that bird. Other eggs of the Yellow Wagtail are like those of the Reed Warbler, having a greenish-white ground mottled all over with greenish-brown and underlying markings of grey. Some of the eggs with the ground-colour greenish-white have the spots collected round the larger end so as to form a ring. Axis, 0·7–0·6 inch; diam. 0·55–0·6.

THE BLUE-HEADED WAGTAIL. MOTACILLA FLAVA.

Motacilla flava, Linn., S. N., i., p. 331 (1766); Newt. ed. Yarr., i., p. 558 (1874); Dresser, B. Eur., iii., p. 261, pl. 129 (1875); B. O. U. List. Br. B., p. 31 (1883); Seeb., Br. B., ii., p. 208 (1884); Sharpe, Cat. B. Brit. Mus., x., p. 516, pl. vi., figs. 3, 5 (1885); Lilford, Col Fig. Br. B., pt. vi. (1888); Saunders, Man., p. 119 (1889).
Budytes flava, Macg., Br. B., ii., p. 203 (1839).

Adult Male in Breeding Plumage.—General colour olive-yellow, the rump lighter; breast entirely bright yellow, the under tail-coverts of the same colour; head blue-grey, with a distinct white eyebrow; bill and feet blackish; iris brown. Total length, 5·7 inches; culmen, 0·55; wing, 2·95; tail, 2·7; tarsus, 0·85.

Adult Female.—Duller in colour than the male, and slightly browner on the head and back: underneath paler yellow, whiter on the throat. Total length, 6 inches; wing, 3·1.

Young.—Still paler than a thedult female, and with dusky spots on the chest; over the eye a streak of tawny buff; ear-coverts brown; cheeks and throat dull white, becoming browner on the fore-neck and chest. The young birds of the Blue-headed Wagtail are scarcely distinguishable from those of the Yellow Wagtail.

Range in Great Britain.—An accidental visitor in summer to England and Scotland, principally to the eastern coasts. We ourselves once shot a fine male bird in Sussex, near Pagham, in May, in company with Yellow Wagtails. Mr. John Hancock has certified to the nesting of the species in Northumberland, and Mr. Menteith Ogilvie has shown us some birds killed by him in Suffolk during the nesting season which appeared to be females of *M. flava*, though the latter are difficult to distinguish from the females of *M. campestris* when their plumage becomes worn.

Nest.—Similar to that of the Yellow Wagtail, and built in similar situations.

Eggs.—Four to six in number, and, as might have been expected, very similar in character to those of the Yellow Wagtail. As a rule they appear to be more uniform in tint than is the case with the latter bird, the series in the British Museum not showing the mottled Warbler-like eggs which are often found in a series of those of *M. campestris*. Axis, 0·7–0·75 inch; diam., 0·55–0·6.

THE PIPITS. GENUS ANTHUS.

Anthus, Bechst. Naturg. Deutschl., iii., p. 704 (1807).
Type, *A. trivialis* (Linn.).

The Pipits differ from the Wagtails in having a brown plumage and more Lark-like appearance. The secondary quills are elongated and of about the same length as the primaries, and, in the style of plumage, the Pipits resemble the Larks, but in the formation of the wings and also in the curious "dipping" motion of the tail, they show their close relationship with the Wagtails.

There are five genera of Pipits; *Anthus*, with thirty-three species; *Xanthocorys*, from Brazil, with one species; *Neocorys*, from the Upper Missouri and Manitoba in North America, also with one species; *Oreocorys*, with a single species confined to the Himalaya Mountains; and *Macronyx*, with five species, confined to Africa. The birds of the last-named-genus are the largest of all Pipits, and are remarkable for the bright yellow or pink colour of the breasts, an anomaly amongst these plain coloured birds.

The True Pipits, of the genus *Anthus*, are found over the greater part of both Hemispheres, and are abundant in South America, Africa, and the Indian Region generally, extending to Australia and New Zealand, but not reaching the islands of Oceania. The genus comprises birds of different form and habits, and the shape of the hind claw varies almost as much as in the Larks, some of the species being frequenters of woodland, like our Tree-Pipit, while others are lovers of open country, like our Meadow-Pipit.

THE TREE-PIPIT. ANTHUS TRIVIALIS.

Alauda trivialis, Linn., S. N., i., p. 288 (1766).

Anthus trivialis, Newt. ed. Yarr., i., p. 569 (1874); Dresser, B. Eur., iii., p. 309 (1874); B. O. U. List Br. B., p. 33 (1883); Sharpe, Cat. B. Brit. Mus., x., p. 543 (1888); Saunders, Man., p. 123 (1889).

Anthus arboreus, Macg., Br. B., ii., p. 188 (1839); Seeb., Br. B., ii., p. 219 (1884).

Adult Male in Summer Plumage.—Above clear sandy-brown, streaked with black centres to the feathers; below sandy-buff, the centre of the breast and abdomen inclining to buffy-white, clearer sandy-buff on the under tail-coverts; the lower throat and fore-neck broadly streaked with black, more narrowly on the breast, sides of body, *and flanks;* under wing-coverts sandy-buff; median and greater upper wing-coverts tipped with white, forming a double wing-bar; the pattern of the outer tail-feathers white, with an oblique dusky-brown mark on the inner web; bill dark-brown, the lower mandible fleshy; feet dark-brown; iris pale-brown. Total length, 6·0 inches; culmen, 0·55; wing, 3·45; tail, 2·55; tarsus, 0·9.

Adult Female.—Similar to the male, but with narrower streaks on the under surface of the body. Total length, 6 inches; wing, 3·45.

Winter Plumage.—Brighter than in summer, the general tone of the plumage richer buff, especially below, where there is a more tawny shade. The bird passes through a complete moult before leaving its winter quarters, as a pair which we kept in confinement through an entire winter moulted in March of the following year.

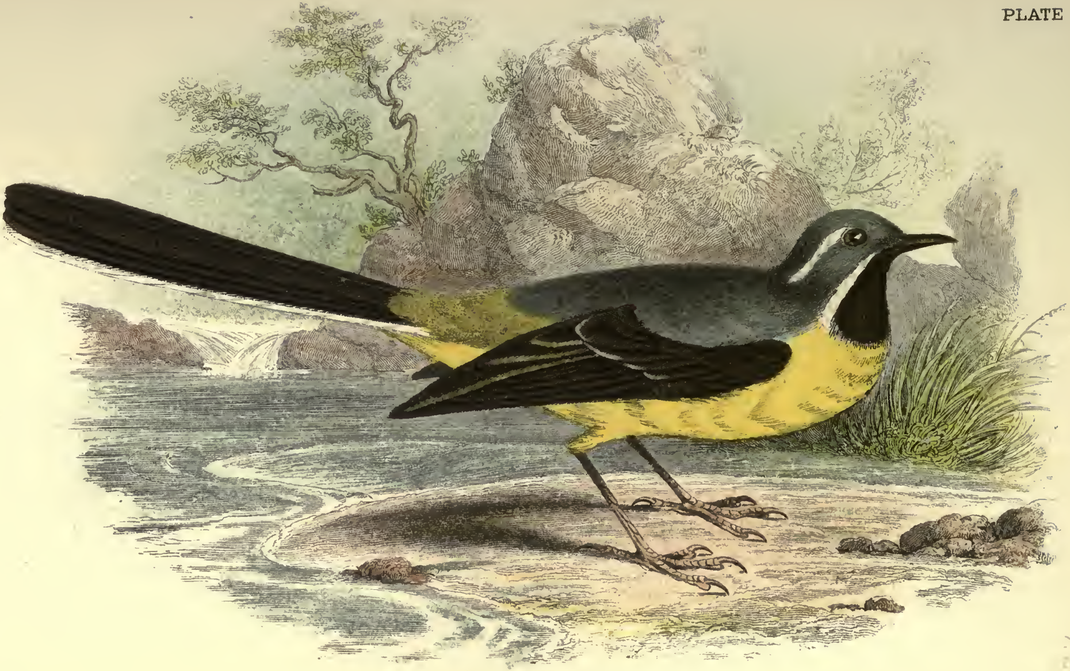
NOTE.—The Tree-Pipit can always be distinguished from the other British species by its curved hind claw, which is not so long as the hind toe itself.

Range in Great Britain.—A summer visitor, affecting wooded districts, and breeding in most parts of the British Islands; but becoming rarer in the northern portions of Scotland. Almost unknown in Ireland.

Range outside the British Islands.—Breeding throughout the greater portions of Central and Northern Europe, and as far east as the Valley of the Yenesei, reaching to lat. 62° in the latter country, to about lat. 65° in the Petchora Valley, and to 69° in Norway. In the Mediterranean countries it is a migrant, though a few are said to breed on the mountains. It winters in Africa, and in North-western and Western India. Further to the eastward the Tree-Pipit disappears; but its place is taken by a closely allied species, the Indian Tree-Pipit (*Anthus maculatus*), which inhabits the greater part of Eastern Siberia, and ranges west to the Yenesei. Its winter home is in the plains of India and Burma, but always on the eastern side of the Indian Peninsula. The Indian Pipit closely resembles our own bird, but is more olive-green in colour, and has much larger spots of black on the breast.

Habits.—At first sight, the present species might easily be mistaken for the Common Tit-lark, or Meadow-Pipit, but its

PLATE XIII.



GREY WAGTAIL.

INSTITUTION
GLASGOW

habits are quite different. Its colours are also much brighter and purer in tint than the latter bird, its song is much superior, and it frequents, by preference, the woodland country. It affects the outside of woods and plantations, when it may be seen mounting into the air, and uttering its pretty and melodious song. The birds which we kept in our aviary during the winter were very tame, and kept themselves scrupulously neat and clean, having a Thrush-like appearance. They were always fond of bathing, and had to be carefully looked after to prevent their taking a chill in severe weather. They never uttered more than a whispered call-note, "chick," but when allowed to walk about the room, they took little flights from the ground, mounting and falling in a most graceful manner, and roosting on the highest point of the curtains or on a picture-frame. Having demonstrated to us the fact that both male and female moulted in the spring, they were allowed to fly away, and although they were in captivity the tamest of birds, they bolted straight away as soon as their cage was opened, and never even visited the garden for food.

The food of the Tree-Pipit consists almost entirely of insects, which it seeks for mostly on the ground, often frequenting pasture land, and running about among the cattle in pursuit of flies, after the manner of the Wagtails. Mr. Dixon also mentions that it devours corn when the seeds are in a soft and milky state.

Nest.—Placed on the ground, often on a bank by the side of a wood; but sometimes in a corn-field at some distance from its favourite haunts. It is composed of dried grasses, with some moss and rootlets, being lined with finer grass and a little horse-hair.

Eggs.—Four to seven in number, and extremely variable in tone of colour and markings. The series in the British Museum varies between a purplish- or pinkish-red, and stone-grey ground-colour. Between these two extremes occurs every shade of variation in tint, and the markings consist either of minute dots, which cover the surface of the egg so as to hide the ground-colour, or constitute bold spots and blotches, sometimes collecting in a ring, or patch, at the larger end of the egg. There are always two kinds of these boldly-marked spots, the principal ones being reddish- or purplish-brown, and the underlying markings purplish-grey. Axis, 0·75–0·9 inch; diam., 0·60–·65.

THE MEADOW-PIPIT. ANTHUS PRATENSIS.

Alauda pratensis, Linn., S. N., i., p. 287 (1766).

Anthus pratensis, Macg., Br. B., ii., p. 181 (1839); Newt. ed. Yarr., p. 575 (1874); Dresser, B. Eur., iii., p. 285, pl. 132 (1874); B. O. U. List Br. B., p. 32 (1883); Seeb., Br. B., ii., p. 224 (1884); Sharpe, Cat. B. Brit. Mus., x., p. 580 (1885); Lilford, Col. Fig. Br. B., pt. ix. (1888); Saunders, Man., p. 125 (1889); Wyatt, Br. B., ix., fig. 1 (1894).

Adult Male in Breeding Plumage. — Olive-brown above, with blackish centres to the feathers, those on the mantle with whitish margins; rump uniform; eyelid and eyebrow pale sandy-buff; throat uniform tawny-buff, as also the breast, which is thickly streaked with black triangular spots, which become narrower on the lower breast; flanks washed with olive and broadly streaked with black; abdomen, vent, and under tail-coverts isabelline white; axillaries smoky-brown, *washed with olive-yellow;* upper wing-coverts with conspicuous margins of dull white; quills externally olive; *light pattern of outer tail-feathers white.* Total length, 5·75 inches; culmen, 0·5; wing, 3·15; tail, 2·45; tarsus, 0·85.

Adult Female.—Similar to the male, but smaller and less strongly spotted below. Total length, 6 inches; wing, 2·95.

Autumn and Winter Plumage.—More decidedly olive-brown in colour, the black spots on the under surface strongly marked and the olive-yellow on the axillaries very plain.

Young.—Like the adults, but more dingy, less olive, and the black streaks on the upper surface broader; a distinct moustachial streak of black, as well as two more stripes on the sides of the throat.

NOTE.—The Meadow-Pipit is known by its small size, and nearly straight hind claw, which is longer than the hind toe itself.

Range in Great Britain.—Universally distributed, frequenting the uplands as well as the lowlands in summer, but occurring more generally in the latter localities during the winter season. Many migrate south in winter, and it is noticeable that those which return to England in the spring are much brighter in plumage than those which are resident in the British Islands. On the south coast of England there appears to be a small resident race of Meadow-Pipit.

Range outside the British Islands.—Generally distributed throughout Central and Northern Europe, ranging eastwards to the Valley of the Ob. Principally known as a winter visitor to the Mediterranean countries, and wintering in Northern and North-eastern Africa.

Habits.—As the name denotes, the present species is more a bird of the meadows than of the trees, like the foregoing bird, but it does occasionally perch on trees and bushes, though its life is principally passed on the ground. It is found in nearly every kind of situation, on moorland and the sides of hills, where its short song is often heard in the spring, as it takes brief flights into the air and descends again to the ground It is especially common near the sea-shore, and frequents the beach and the saltings, where numbers may be seen at any time of the year; and though the species cannot be said to be gregarious during the breeding season, they are found in small parties in the autumn, and sometimes even in large flocks. During the shooting season, the Meadow-Pipit is a frequent object in the turnip-fields, as, when disturbed, it either flies away silently and drops down again a little further on, or flies round and round before settling, uttering a "peep"-ing note. It the winter it may be seen running along the edge of ice-holes in search of food, and then often frequents the shores of rivers, and is sometimes driven to seek its sustenance in farmyards. The food consists almost entirely of insects, which it often pursues into the air like a Flycatcher. It is also said to eat small worms and fresh-water mollusca, while it has also been known to feed on seeds and grain when hard pressed.

Nest.—Composed of dry grass with an admixture of moss, and lined with finer grass or hair. It is always placed on the ground.

Eggs.—From four to six in number, and somewhat variable in tint, though generally uniform in appearance, brown being the prevailing colour. Sometimes the eggs are entirely brown with only a hair-like line here and there, but in most clutches the brown appearance is produced by the mottlings of the eggs, the ground-colour of which is dull white or even bluish-white. Both the brown cloudings and spots and the grey underlying markings are, as a rule, evenly distributed over the egg, and hence the uniform appearance which is created. Some clutches of eggs from the Faeroe Islands in the Seebohm collection vary from those obtained in the British Islands. Six eggs taken by Mr. Müller in the Faeroes are of a pinkish-grey colour, very pale, and covered with a profusion of very minute greyish-brown dots. Another clutch, taken by the same well-known collector, is of a "Wagtail" type, being greenish-white, spotted all over with purplish-brown and grey underlying markings, in some collecting at the larger end. Axis, 0·75–0·85 inch; diam., 0·6–0·65.

THE RED-THROATED PIPIT. ANTHUS CERVINUS.

Motacilla cervina, Pall. Zoogr. Rosso.-Asiat., i., p. 511 (1811).
Anthus cervinus, Dresser, B. Eur. iii., p. 299, pl. 136 (1874); B. O. U. List Br. B., p. 32 (1883); Seeb., Br. B., ii., p. 229 (1884); Sharpe, Cat. B. Brit. Mus., x., p. 585 (1885); Saunders, Man., p. 127 (1889); Lilford, Col. Fig. Br. B., pt. xi. (1889).

Adult Male in Breeding Plumage.—Like the Meadow-Pipit, but the throat and breast not spotted or streaked, *of a vinous red like the sides of the neck;* the rump and upper tail-coverts mottled with black centres and resembling the back; bill dark brown, the base of the lower mandible and the gape yellow; feet yellowish flesh-colour; iris brown. Total length, 5·6 inches; culmen, 0·55; wing, 3·5; tail, 2·5; tarsus, 0·85.

Adult Female.—Like the male, and has the throat vinous, but not the chest, which is sandy-buff like the rest of the under surface. Total length, 5·3 inches; wing, 3·2.

Winter Plumage.—Resembles that of the Meadow-Pipit, but is distinguished *by the blackish centres to the feathers of the rump and upper tail-coverts;* the median wing-coverts tipped with whitish, forming a tolerably distinct wing-bar.

Range in Great Britain.—An accidental visitor in spring; two examples having been obtained, one near Brighton in March, and another near Rainham, in Kent, in April. It is quite possible that the species, which has a very wide distribution throughout the Palæarctic Region, may occur more often than is supposed, as it may return in the spring migration with Meadow-Pipits, whose winter home it shares in many countries.

Range outside the British Islands.—A more eastern bird than the Meadow-Pipit, being found during the breeding season from Northern Scandinavia to Kamtchatka and Bering Island, throughout the high latitudes of Europe and Siberia, beyond the limits of forest growth. Its winter range is somewhat interesting, as it does not visit India, but is common throughout China and the Burmese countries as far south as the Philippines and Borneo. To the west it winters in Persia, Egypt, and Abyssinia, and has also occurred in most of the Mediterranean countries at this season.

Habits.—From Mr. Seebohm's description of the habits of the species, these seem to be very like those of the Meadow-Pipit. He gives an interesting account of the nesting of the species in the Valley of the Petchora, and again on the Yenesei in Siberia. In Finmark he noticed the Red-throated Pipit beginning to breed in the last week of June. It was not so shy as the Meadow-Pipit, which was also plentiful in the same locality, and the song resembled rather that of the Tree-Pipit, the call-note being similar to that of the common Tit-lark or Meadow-Pipit. It is described by Mr. Seebohm as being very decidedly a swamp-bird, and rarely seen on the dry grassy hills, or on the rocky slopes. In North-eastern Russia he found the species very common, being almost as numerous on the tundra as the Lapland Bunting, which was the most abundant species of the region. As in Finmark, the species was a late breeder, arriving in the valley of the Petchora on the 17th of May, and passing further northward. On the 6th of June it arrived within the Arctic Circle on the Yenesei river.

Nest.—"Entirely made of dry grass, the coarser pieces being used for the foundation, and the finest reserved for the lining. It is placed in recesses on the sides of the tussocky ridges which intersect the bogs." (*Seebohm.*)

Eggs.—Four to six in number. In general appearance resembling those of the Meadow-Pipit, all the variations of the latter species being represented in a series of eggs of *Anthus cervinus*. Many of the latter, however, are of a richer and darker brown than is seen in the Meadow-Pipit's egg, and there is further an occasional clutch, not seen in the case of the latter bird, where the colour greatly resembles that of the Tree-Pipit's eggs, the mottlings and spots being extremely bold and distinct, especially the brown overlying spots, which are distributed over the egg. Axis, 0·75–0·85 inch; diam., 0·6–0·65.

RICHARD'S PIPIT. ANTHUS RICHARDI.

Anthus richardi, Vieill., N. Dict. d'Hist. Nat., xxvi., p. 491 (1818); Macg., Br. B., ii., p. 199 (1839); Newt. ed. Yarr., i., p. 598 (1874); Dresser, B. Eur., iii., p. 328, pl. 138 (1874); B. O. U. List Br. B., p. 34 (1883); Seeb., Br. B., ii., p. 233 (1884); Sharpe, Cat. B. Brit. Mus., x., p. 564 (1885); Saunders, Man., p. 131 (1889); Lilford, Col. Fig. Br. B., pt. x. (1889).

Adult Male in Breeding Plumage.—Of large size, with a powerful foot, the hind claw about equal to the length of the hind toe. Dark brown above, with sandy-buff edges to the feathers, like a Lark in appearance: lesser wing-coverts dull sandy-rufous, the median and greater coverts as well as the quills dusky, edged with sandy rufous, the coverts tipped with pale fulvous; axillaries and under wing-coverts sandy-rufous, with dusky bases; flanks perfectly uniform, without blackish streaks; light portion of outer tail-feather white; bill black, the lower mandible flesh-colour, the gape yellow; feet reddish flesh-colour; iris dark brown. Total length, 7·7 inches; culmen, 0·6; wing, 3·95; tail, 2·8; tarsus, 1·1.

Adult Female.—Similar to the male in colour, but smaller. Total length, 7 inches; wing, 3·55.

NOTE.—Richard's Pipit is easily distinguished by its large size, and large hind claw, which is equal to or longer than the hind toe itself.

Range in Great Britain.—An irregular visitor in autumn, principally to the south-eastern and southern coasts.

Range outside the British Islands.—A bird of Eastern Asia, breeding from the valley of the Yenesei and Eastern Turkestan to Eastern Siberia and Mongolia, whence it migrates south in autumn to China, India, and the Burmese countries and the Moluccas. At the same season of the year it journeys westward, and has been recorded from most of the countries of Europe.

Habits.—Mr. Seebohm says that this present species is "essentially a Steppe bird, delighting in wet pastures and rich meadows left for hay in the northern climates, where the harvest is late and it can build its nest in the long grass, and rear its young before the mowers come to disturb it, and where it can find abundance of food on the short grass after the hay is cleared away, just when its young are most voracious." The bird has a habit of hovering in the air, like a Kestrel, and is then easily procured; otherwise, Mr. Seebohm says, it is a most difficult species to obtain, as it runs about in the grass and cannot be detected. Colonel Legge states that in its winter-quarters in Ceylon, Richard's Pipit frequents cattle-pastures, and is very fond of dusting itself in the road like a Lark. Everywhere it seems to be a shy species.

Nest.—Not yet described, but is doubtless similar to that of other Pipits.

Eggs.—Four to six in number. Axis, 0·85–0·9 inch; diam., 0·7. Ground-colour greenish-white, or brownish-white, profusely spotted and clouded with spots of brown or greenish-brown, with underlying spots of grey, almost completely hiding the ground-colour of the egg. This is more particularly the case in the browner type of egg in the British Museum.

THE TAWNY-PIPIT. ANTHUS CAMPESTRIS.

Alauda campestris, Linn., S. N., i., p. 288 (1766).

Anthus campestris, Newt. ed. Yarr., i., p. 592 (1874); Dresser, B. Eur., iii., p. 317, pl. 137 (1874); B. O. U. List. Br. B., p. 33 (1883); Seeb., Br. B., ii., p. 239 (1884); Sharpe, Cat. B. Brit. Mus., x., p. 569 (1885); Saunders, Man., p. 129 (1889); Lilford, Col. Fig. Br. B., pt. xviii. (1891).

Adult Male.—Sandy-coloured above, with dark centres to the feathers; rump nearly uniform; cheeks, throat, and under surface of body whitish, with a wash of sandy-buff on the breast and sides of the body; *chest uniform;* wing-coverts edged with sandy-buff; outer tail-feather *nearly entirely white*, with a brown edging to the inner web, the shaft of this feather white; the next tail-feather blackish-brown on the inner web, the outer web entirely light fulvous, this colour extending obliquely along the inner web to the tip, the shaft brown; sides of face whitish with a moustachial streak of dusky. Total length, 7 inches; culmen, 0·65; wing, 3·6; tail, 2·8; tarsus, 1·0.

Adult Female.—Similar to the male, but with the moustachial streak less marked; sides of breast slightly streaked with dusky brown. Total length, 6·5 inches; wing, 3·3.

Winter Plumage.—Paler than in summer, the sandy margins to the feathers broader and more marked, especially on the quills; moustachial streak not emphasised.

Young Birds.—Resemble the winter plumage of the adults, but distinguished by dusky blackish triangular spots on the foreneck and chest.

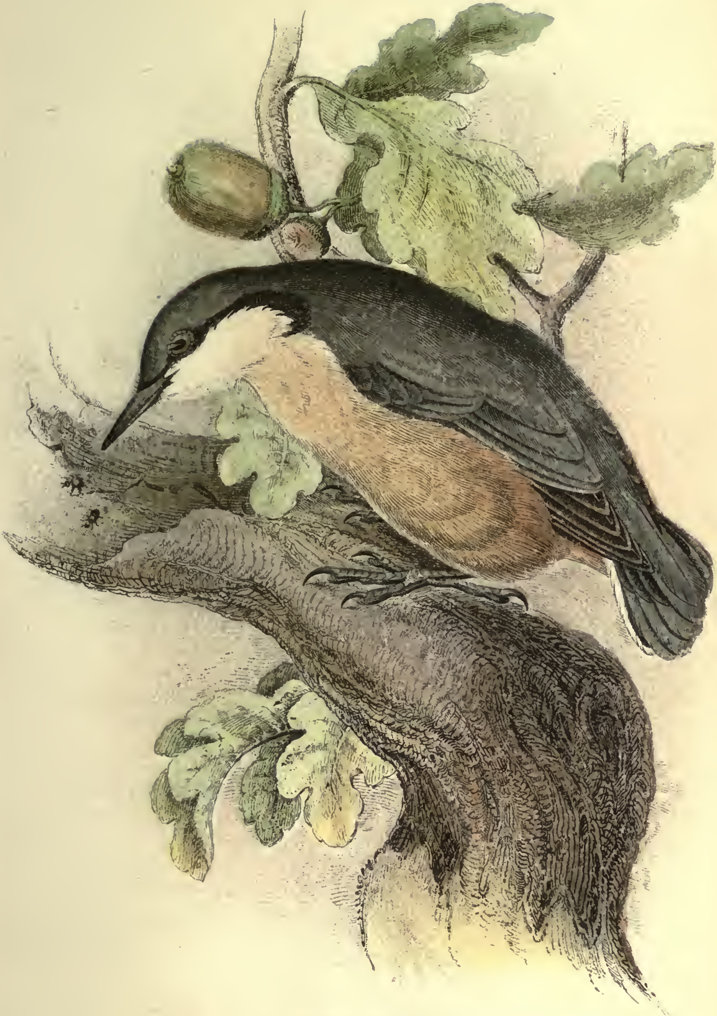
NOTE.—The Tawny-Pipit may be distinguished by its slightly-curved hind claw, which is equal to the hind toe in length, or even exceeds the latter, by its uniform breast when adult, the broad sandy-coloured margins to the wing-coverts, the unstreaked flanks, and the pattern of the two outer tail-feathers.

Range in Great Britain.—A rare autumnal visitor, generally to the south coast. Several examples have been obtained near Brighton.

Range outside the British Islands.—Formed throughout the sandy and arid districts of Central and Southern Europe, eastward to Turkestan and Eastern Siberia, wintering in Senegambia, N.E. Africa, and the plains of North-western India.

Habits.—From its pale coloration this Pipit might be considered a desert-haunting bird, but it cannot be said strictly so to be, though it is undoubtedly a frequenter of sandy plains and prairie-ground. It inhabits the sand-dunes of the Baltic Provinces, and even extends as far west as Holland and the north of France; found as well as in other tracts of sandy and waste land throughout the greater part of Europe, its furthest north-

PLATE XIV.



NUTHATCH.

ern point being the south of Sweden. It arrives in South-eastern Europe at the end of March or the beginning of April, and reaches its more northern breeding ground at the end of the latter month, or early in May. One of the best accounts of the habits of this species is contributed by Mr. Dixon to Mr. Seebohm's "History of British Birds," and is quoted at length, as it illustrates a mode of life somewhat different to that of our own Pipits: "The Tawny-Pipit is very common in the more elevated parts of Algeria, and is a bird that cannot easily be passed unseen. To look at its plumage one might almost expect to meet with it only in the desert; but in summer, at any rate, it does not frequent that sandy waste, and we only met with it on the elevated plateaux beyond Constantine, and in the neighbourhood of Batna and Lambessa. The road between these two latter places runs through rich meadows and barley-fields, and abounded with Tawny-Pipits in abundance. I saw them only in pairs; they were very tame, and often allowed themselves to be almost trodden upon before they would take wing. I often saw them running about very quickly over the bare pieces of ground, stopping now and then to look round to see if they were being pursued. When flushed they would often fly for a little distance in a very straightforward manner, not undulating, as is their usual flight, and perch on a little tuft of higher vegetation, or on a boulder, or even a paling. Many of the birds were on the road, where you could witness their actions very closely as they ran up and down like a Wagtail, often giving their tail a sharp jerk, accompanied by a flicking movement of the wings. They seemed to especially prefer a large unenclosed plain of rough land on which no crop was sown, what we should call summer fallow in England. Here I repeatedly saw the birds soar into the air for a little way and sing their loud but simple song, which put me in mind of the Sky-Larks' notes, although not so rich or so sweet. The species does not soar so high as the Tree-Pipit, and seems anxious to get to the ground again. When alarmed by the report of a gun, the birds close at hand would generally rise for some distance into the air and betake themselves to safer quarters in a drooping flight, uttering a short *whit*, or *yhit*, as they went. I found an empty nest, which could only have belonged to this bird, placed amongst the growing barley, which was about twelve inches high, in exactly a similar place to that in which the Sky-Lark often builds, made of dry grass lined with hair.

Nest.—On the ground, generally concealed under a clod of earth or tuft of herbage, or under a bush; sometimes in a bank near a dried-up streamlet, or even in the open plains among the growing crops. It is composed of dry grass, often intermixed with a few stems of coarse herbage or straws, together with roots, and lined with horse-hair, although in many cases fine roots alone serve the purpose.

Eggs.—From four to six in number. The general colour is very light, when compared with that of the eggs of the other European Pipits. The ground-colour is white or greenish-white, and the spotting varies in intensity and degree. In some eggs the whole surface is covered with tiny dots of black or blackish-brown, the grey underlying dots being scarcely perceptible. On those which have the ground-colour greenish-white, the spots are of a greenish-brown tint, and on those eggs which incline to a creamy-white ground, the overlying spots are reddish-brown, and, with the grey underlying spots, are distributed all over the egg. Axis, 0·8–0·95 inch; diam., 0·65–0·7.

THE WATER-PIPIT. ANTHUS SPIPOLETTA.

Alauda spinoletta, Linn., S. N., i., p. 288 (1766).
Anthus spipoletta, Newt. ed. Yarr., i., p. 581 (1874; nom. emend.); B. O. U. List Br. B., p. 34 (1883); Sharpe, B. Brit. Cat. Mus., x., p. 592 (1885); Saunders, Man., p. 133 (1889); Lilford, Col. Fig. Br. B., pt. xviii. (1891).
Anthus spinoletta, Dresser, B. Eur., iii., p. 335, pl. 140 (1874); Seeb., Br. B., ii., p. 248 (1884).

Adult Male in Breeding Plumage.—Above light brown, the mantle mottled with dusky centres to the feathers; lower back and rump uniform; head and hind-neck ashy-grey, slightly streaked with dusky on the crown; a broad whitish eyebrow; cheeks and under surface of body pale rosy, extending over the abdomen, without any streaks upon the chest; lower abdomen and under tail-coverts whitish; wing-coverts tipped with dull white; eyebrows and lores isabelline; flanks slightly streaked with brown; light pattern of outer tail-feather white. Total length, 6·6 inches; culmen, 0·55; wing, 3·55; tail, 2·75; tarsus, 0·95.

Winter Plumage.—Like the summer plumage, but without the reddish colour on the under surface, which is whitish with a brown moustachial line on each side of the throat; the fore-neck, chest, and breast spotted with brown, less distinct on the sides of the body and flanks; light pattern on outer tail-feather white, the penultimate feather with a conspicuous white tip.

NOTE.—The birds which visit England are always likely to be in winter plumage or to be immature birds. From the young of the Tawny-Pipit they can be told by the streaks on the flanks, which are uniform in the latter bird. From the Meadow-Pipit they can be distinguished by having the end of the penultimate feathers *brown* along the outer web; in the Meadow-Pipit this part of the feather is *white*. From the Rock-Pipit, with which the Water-Pipit is most easily confounded, it can be recognised by having the light part of the outer tail-feather *white*, instead of *smoky-brown*, as it is in *A. obscurus*.

Range in Great Britain.—An accidental visitor in autumn and spring, four specimens having been recorded, all from the vicinity of Brighton. One was killed there in 1864, another near Worthing in the same year, a third near Shoreham in October, 1868, and a fourth near Lancing in March, 1877.

Range outside the British Islands.—An inhabitant of the mountain regions of Central and Southern Europe, throughout Central Asia to the Altai Mountains, occurring also in the high ranges of Persia and Baluchistan. A smaller race, named *Anthus blakistoni*, is found in Eastern Siberia and China.

Habits.—From its mountain-loving propensities, Mr. Seebohm prefers to call this species the "Alpine" Pipit, as it frequents only the higher mountain slopes above the forest growth during the breeding season, visiting the lowlands in the winter. He has given a good account of the nesting of the species in the Engadine, where he found it on the higher mountains, living in the same districts as the Marmot, "where the gentle *ist* of the Pipit contrasts with the loud *mee-ik* of the latter, these being almost the only signs of animal life in these regions." The ways of the species are very similar to those of the Meadow-Pipit, its food consisting of insects, small worms and land-shells, but it is said to eat seeds in winter, when insect life fails. Like other Pipits, it runs actively along the ground, and also flies up into the air to utter its song, which is described by Mr. Seebohm as being like that of the Meadow-Pipit, but not so sweet: its call-note also resembles that of the latter bird.

Nest.—Composed of dry grass, with some moss, lined with fine roots, and occasionally with horse-hair or wool.

Eggs.—Four or five in number. The ground-colour is dull white, obscured by the closely-set mottlings and numerous dots of purplish-brown, sometimes clouding round the larger end, where there are hair-like lines of black. Another type of egg is more like that of a Wagtail, wherein the brown spots are more sparsely distributed, except at the larger end, where they collect, the greyish underlying markings being also very distinct. Both brown- and grey-tinted eggs occur in the same clutch. Axis, 0·8–0·9 inch; diam., 0·65.

THE ROCK-PIPIT. ANTHUS OBSCURUS.

Alauda obscura, Lath. Ind. Orn., ii., p. 494 (1790).
Anthus aquaticus, Macg., Br. B., ii., p. 194 (1839).
Anthus obscurus, Newt. ed. Yarr., i., p. 586 (1874); Dresser, B. Eur., iii., p. 342, pl. 141 (1877); B. O. U. List Br. B., p. 35 (1883); Seeb., Br. B., ii., p. 244 (1884); Sharpe, Cat. B. Brit. Mus., x., p. 599 (1885); Saunders, Man., p. 135 (1889); Lilford, Col. Fig. Br. B., pt. xviii (1891).

Adult Male in Breeding Plumage.—Olive brown above with dark centres to the feathers; throat dull white; under surface of body whitish, very thickly mottled with dark brown centres to the feathers; wing-coverts tipped with dull white; *light pattern of outer tail-feather smoky-brown*; the penultimate feather also smoky-brown at the tip; bill black; feet fleshy-brown; iris brown. Total length, 6·8 inches; culmen, 0·7; wing, 3·45; tail, 2·6; tarsus, 0·95.

Adult Female.—Similar to the male, but less spotted underneath. Total length, 6·4 inches; wing, 3·35.

Winter Plumage.—Resembles the summer plumage, but is more olive; a narrow moustachial line of blackish-brown, widening out on to the sides of the lower throat; throat dull white, marked with olive; fore-neck and breast olive, the feathers broadly centred with spots and streaks of dark brown; flank-feathers olive brown, streaked with darker brown; lower breast and abdomen as well as the under tail-coverts dull white, *washed with pale olive-yellow.*

NOTE.—The Rock-Pipit can be told by the smoky-brown tint of the light pattern of the outer tail-feathers, which is found in birds of all ages.

Range in Great Britain. — Resident on the rocky coasts of Scotland and Ireland, and also in England on suitable parts of the coast, but not breeding on the more open parts, where it occurs only as a migrant or winter visitor.

Range outside the British Islands.—This is not yet well understood, as few authors have recognised the validity of the Scandinavian form of Rock-Pipit. We ourselves have never seen an undoubted specimen of our own Rock-Pipit from any other locality than the British Islands, but the spotted-breasted form is said by Mr. Howard Saunders to occur in the Channel Islands and along the shores of Northern and Western France. In the other portions of Northern Europe it is represented by the Scandinavian form, *A. rupestris.*

Habits.—In the south of England and on all our open coasts the Rock-Pipit is found on migration or in winter, and sometimes in some numbers. Its actions are like those of the Meadow-Pipit, and it might be mistaken for the latter bird, were it not for its larger size and generally darker appearance. It runs along the shore or over the sea-weed, picking up its food, which consists of shore-insects and small mollusca; it also feeds on seeds of marine plants, and the Rock-Pipits which we killed in Heligoland fed on some kind of insect which rapidly decomposed, so that on more than one occasion the skin of the gullet peeled off in a few hours, and the birds had to be attended to by the taxidermist very soon after death, to ensure their conservation.

The Rock-Pipit breeds at the end of April or beginning of May, and during the pairing-season the song of the male is heard incessantly, as he springs into the air. Like other Pipits, the song is generally uttered as the bird descends with outspread wings and tail. Its notes are described as very musical, not unlike those of the Meadow-Pipit, but not equal to those of the Tree-Pipit.

Nest.—Differs considerably in the materials used for its construction, according to locality, being generally built of fine dry grass, sometimes intermixed with sea-weed and the stalks of shore-plants. Some of them have an admixture of moss, and are frequently lined with hair. As Mr. Seebohm observes, when the birds can obtain hair, they use it; where fine grass only can be procured, they generally employ it for the construction of the nest, whilst in localities affording a more extensive choice, the materials are more varied. The nest is generally placed in a well-concealed situation, but always close to the sea-shore. It is sometimes placed in a cliff several hundred feet above the level of the waves, more often close to the shore under a tuft or in the hole of a rock or a bank.

Eggs.—Four to five in number, and very dark as a rule in colour, the ground-tint being greyish-white or greenish-white, overlaid with spots and mottlings of dark brown or reddish-brown, so thickly distributed as to impart to the eggs a uniform appearance. Some clutches are much paler than others and have a white ground, spotted with brown, very much after the pattern of a Tree-Pipit's egg; these light-coloured eggs are, however, the exception, the general tone being very dark. Axis, 0·85–0·9; diam., 0·65.

THE SCANDINAVIAN ROCK-PIPIT. ANTHUS RUPESTRIS.

Anthus rupestris, Nilss. Orn. Suee., i., p. 245, pl. 9, figs. 1, 2 (1817).

Adult in Breeding Plumage.—Similar to the preceding bird, but with the under surface of the body uniform vinous, without spots. Total length, 6·1 inches; wing, 3·4; tarsus, 0·85.

Winter Plumage.—Indistinguishable from that of the ordinary Rock-Pipit of the British Islands.

Range in Great Britain.—An autumn migrant to the east coast of our islands, and passing regularly along the south coast, returning by the same route from west to east in the spring, at which season the differences between this race and our own Rock-Pipit are easily discernible.

Range outside the British Islands.—Occurs along the rocky shores of the Baltic, Denmark, and Western Scandinavia as far as the White Sea.

Habits.—The same as those of *A. obscurus.*

Nest.—Like that of *A. obscurus.*

Eggs.—Also like those of the above-mentioned species.

THE CREEPERS. FAMILY CERTHIIDÆ.

These birds are mostly recognised from the rest of the Passeriformes or Perching Birds of the Old World, by their peculiarly pointed tail, which is like that of a miniature Woodpecker, and serves the same purpose, having stiffened shafts to the feathers, as a support to the bird when it is clinging to or climbing up a tree. In their mode of nesting, and in the colour of their eggs, the Creepers are very like Tits, to which they are undoubtedly closely allied; but they possess very long and slender bills, and their toes are also very long, especially the hallux, or hind toe, which has always a large claw.

Just as in the Woodpeckers, which have not all stiffened shafts to the tail-feathers, there are among the *Certhiidæ*, birds in which the tail is soft, like that of the Tits. Such forms are *Tichodroma* and *Salpornis*, the former a bird of the Mediterraneo-Persic Sub-region, the latter of the Indian and African Regions.

In all the Creepers the bill is long and curved, very different from that of the Tits, where it is stout and strong. The tongue is ordinary, and not capable of being extended, as is the case with the tropical Sunbirds (*Nectariniidæ*), which have a very similarly shaped bill. The tail-feathers are twelve in number. The Creepers have no bristles at the gape, and in this respect they approach the Wrens, as they do also in the colour and markings of the eggs. They are poor nest-builders, much inferior to Tits in this respect, and far behind the Wrens in architectural skill. Although laying spotted eggs, they conceal them in the same manner as Tits and Wrens, the reason being doubtless the same in all three cases, viz., that the glossy white ground-colour of the egg is so conspicuous, that the few spots would not serve to hide them, were the nest built in the open.

THE TRUE CREEPERS. GENUS CERTHIA.

Certhia, Linn., Syst. Nat., i., p. 184 (1766).
Type, *C. familiaris*, Linn.

The true Tree-Creepers—such as our British birds—are about ten in number, and are found in the northern parts of both Hemispheres, as far south as Guatemala in Central America, and over the greater part of Europe and Asia, as far as the Himalayas and the Burmese countries. The characters of the genus have been explained under the heading of the family (*vide suprà*).

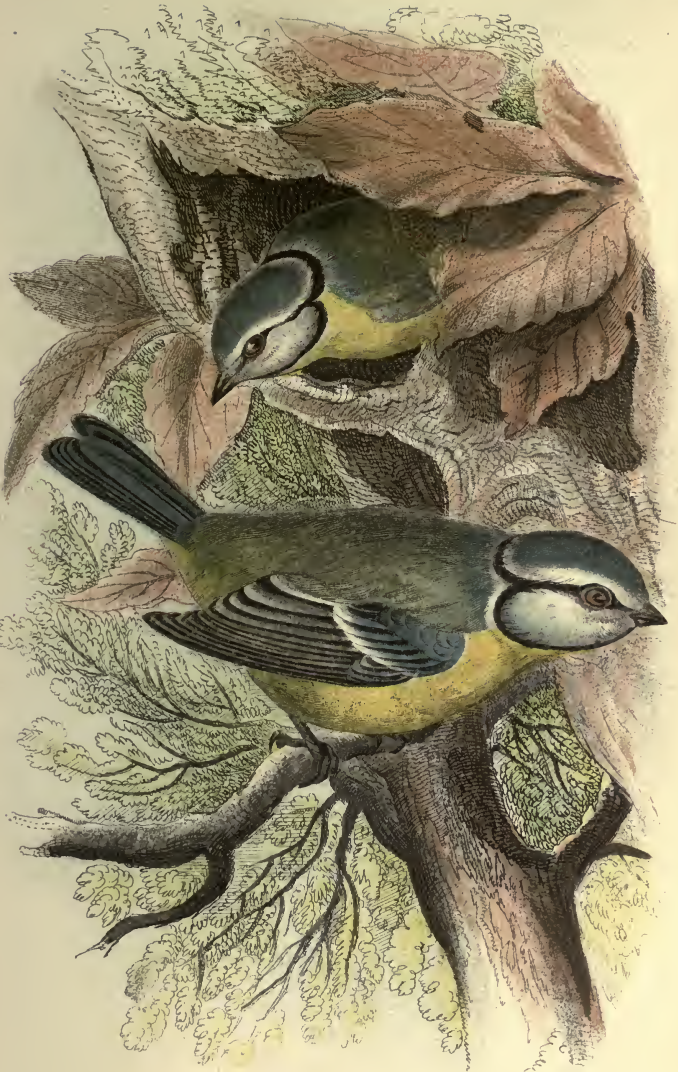
THE TREE-CREEPER. CERTHIA FAMILIARIS.

Certhia familiaris, Linn., S. N., i., p. 184 (1766); Macg., Br. B., iii., p. 33 (1840); Newt. ed. Yarr., i., p. 468 (1874); Dresser, B. Eur., iii., p. 195, pl. 122 (1874); B. O. U. List Br. B., p. 45 (1883); Seeb., Br. B., i., p. 511 (1883); Gadow, Cat. B., Brit. Mus., viii., p. 323 (1883); Lilford, Col. Fig. Brit. B., pt. iv. (1887); Saunders, Man., p. 109 (1889); Wyatt, Brit. B., pl. 9, fig. 2 (1894).

Adult Male.—General colour above brown, with a tinge of golden buff, the head and back streaked with ashy-grey centres to the feathers; the rump and upper tail-coverts orange-tawny, the feathers long and fluffy, and having a silky white mark just before their tips; lores dusky, as also the feathers below the eye and along the upper edge of the ear-coverts; above the eye a streak of silky white; sides of face and under surface of body also silky white; wing-coverts tipped with yellowish-buff, the greater coverts with white, before which is a black band; the quills dusky-brown, chequered with a broad bar of buffy-white across the inner primaries and secondaries, bordered above and below with black; the inner secondaries externally buff towards their ends, the innermost black before their white tips; tail-feathers brown, with reddish-brown shafts; bill dark brown, the lower mandible paler; feet brown; iris clear hazel. Total length, 5·5 inches; culmen, 0·7; wing, 2·5; tail, 2·3; tarsus, 0·6.

Adult Female.—Similar to the male in plumage. Total length, 5 inches; wing, 2·5; tarsus, 0·55.

PLATE XV.



BLUE TITMOUSE.

Young.—Much more mottled on the upper surface than the adults, the central buff markings to the feathers very much larger and occupying nearly the whole of the feather; the pattern of the wing as in the adult, the cross bands on the quills all very strongly indicated; the under surface of the body dull white, the feathers of the breast obscured by dusky-brown tips.

Range in Great Britain.—Resident in nearly every part of the British Islands, as far north as the Isle of Skye and Caithness, and occurring as a straggler in the Orkneys and Shetland Islands. Mr. Ridgway considers that the British Tree-Creeper is a different species from that inhabiting the continent of Europe, and has named it *Certhia britannica.* He says that the form of the British Islands is browner in colour, the wings of a deeper tawny colour, and the under-parts duller. (Cf. Ridgw., Proc. U. S. Nat. Mus., v., p. 113 (1882). The continental bird is certainly greyer, the streaks ashy instead of buff; the rump is not so conspicuously tawny in the foreign specimens, but there is no difference in the colour of the under-parts. Such is our conclusion after comparing a series of skins in the British Museum, but the differences can hardly be called specific, as French specimens are intermediate.

Range outside the British Islands.—Throughout the Palæarctic Region, *i.e.*, Europe and Asia north of the line of the Himalayas. Mr. Ridgway, however, in his paper above referred to, recognises two races in Europe besides the one he calls *C. britannica*, and, according to the opinions of recent writers, there are several races of the Common Creeper to be distinguished in the Palæarctic Region alone, to say nothing of the American Creeper (*C. americana*), which can scarcely be separated from its European representative. The Himalayas and the off-lying mountain ranges of the chain in Burma possess six species, these regions being very rich in Creepers, Tits, and Nuthatches. The northern range of the European *Certhia* is 63° N. lat. in Scandinavia, 60° in Russia, and about 57° in Siberia. It is found in Algeria to the south of the Mediterranean, but not in those countries where no pine-forests occur.

Habits.—Notwithstanding the name of *familiaris* which Linnæus bestowed on the Creeper, it is by no means a familiar bird to the majority of English people, though it is really quite a common bird in most of our counties. Its single note, *wheest*, is somewhat ventriloquial, and the bird cannot always be detected by the sound. If once the note be recognised, however, it is not long before the bird can be discovered, as it pursues a course along a tree or branch, and then flies down to a lower level, though even then it may escape observation, owing to its small size and sober colouring. It runs up the trees in the manner of a tiny Woodpecker, but its weak bill is not capable of hammering at the bark like the last-named bird, or of prising off a large piece, as the Nuthatch can do. Its food consists of tiny insects, and spiders constitute a large portion of its prey, in pursuit of which the bird climbs most actively, sometimes running up the trunk to the top of the tree or turning aside to follow the course of some large branch, examining both the upper and under sides of the latter, but always steadily pursuing its course towards the end of the bough. In many of its movements it is very like a Tit, but it is never seen to turn back or move with its head downwards, as a Nuthatch or a Woodpecker will do. Both male and female are very assiduous in the care of their young, but the latter are very noisy, and often lead to the discovery of the well-concealed nest, by the squeaking that they make on the arrival of the parent-birds with food. The Creeper has been credited with a song, and some observers have recorded the fact in this country. Although we have been acquainted with the species from boyhood, we have never heard a Tree-Creeper sing in England, though the continental birds undoubtedly do sing, and we remember once hearing a bird in France, which had a remarkably loud song, like that of a Tit. So convinced were we that it was a Tit which was singing, that we looked everywhere in the upper branches of the tree for the songster, and at last caught sight of it—a Creeper—clinging to the trunk only a few yards off from where we stood, and singing vigorously a song which we never heard our English bird give way to. So there may be something in the belief that the Creeper of the continent of Europe is not quite the same as our British bird.

Nest.—Placed in a hole in a tree or behind the beam of a shed, often behind a crevice in the bark of a tree, but always concealed and hidden. The nest is generally somewhat rough, composed of moss and small roots, with a good many chips of dead wood.

Mr. Seebohm, however, calls it a handsome little structure, and says that "there is a rustic beauty about a Creeper's nest which few others possess. The crevice behind the bark which the bird usually selects is often too large for the nest itself; and the superfluous space is filled up with a quantity of fine twigs, chiefly of beech and birch. Round the edge of the nest is artfully woven a series of the finest twigs; and the lining is made of roots, grass, moss, and sometimes feathers. But the chief characteristic of the Creeper's nest is the lining of fine strips of inside bark which is almost invariably there."

Eggs.—Four to six in number. Ground-colour either pure white or reddish-white, the markings varying with the ground-colour of the two different styles of egg. Where the egg is creamy- or reddish-white, the spots are decidedly rufous in character, with a tendency to cluster round the large end. In the whiter eggs, the spots vary from reddish-brown to blackish, with underlying spots of grey, not easily distinguishable from the overlying spots. Axis, 0·65 inch; diam., 0·5.

THE CRIMSON-WINGED CREEPERS. GENUS TICHODROMA.

Tichodroma, Ill. Prod., p. 211 (1810).
Type, *T. muraria* (Linn.).

The present genus holds an intermediate position between the Tree-Creepers and the Nuthatches. Like the former, it has a curved and slender bill, and a powerful head; but like the Nuthatches it has a soft tail, a grey upper plumage, and it shares with the Nuthatches the character of the white spots on the outer tail-feathers.

There is only one species of the genus *Tichodroma*, the range of which is given below.

THE WALL-CREEPER. TICHODROMA MURARIA.

Certhia muraria, Linn., S. N., i., p. 184 (1766).
Tichodroma muraria, Dresser, B. Eur., iii., p. 207, pl. 123 (1871); B. O. U. List Br. B., p. 46 (1883); Gadow, Cat.

B. Brit. Mus., viii., p. 331 (1883); Seeb., Hist. Brit. B, i., p. 518, pl. 18 (1883); Saunders, Man., p. 111 (1889); Lilford, Col. Fig. Brit. B., pt. xv. (1890).

Adult.—Above delicate pearly-grey, browner on the crown, and gradually shading off into blackish on the upper tail-coverts and tail, the latter tipped with white spots; the wing-coverts beautiful crimson, the bastard wing black, and the greater coverts black on the inner web, crimson on the outer one; the innermost greater coverts grey, like the outer web of the adjoining inner secondaries; primary coverts and primaries black, externally crimson for the greater part of the outer web; sides of face and throat greyish-white, remainder of the under surface from the fore-neck downwards slaty grey, verging into black on the abdomen and under tail-coverts; under wing-coverts and axillaries dark crimson; quills black below, with a white spot near the end of the second, third, fourth, and fifth primaries, and a second white spot near the base of the same quills; bill and legs black; iris brown. Total length, 6·5 inches; culmen, 1·1; wing, 4·0; tail, 2·1; tarsus, 0·95.

Adult Female.—Similar to the male. Total length, 5·5 inches; wing, 4·0.

During the **Nesting Season** the birds assume a black throat and chest, which are not so distinctly marked in the female as in the male.

Range in Great Britain.—A very rare and accidental visitor, of which two occurrences have been recorded; one as long ago as 1792, as we learn from a letter written by Robert Marsham to Gilbert White, of Selbourne, in which he states that a Wall-Creeper had been shot at his house at Stratton-Strawless, in Norfolk. Mr. F. S. Mitchell had also a specimen in his collection which was shot at Sabden, in Lancashire, on the 8th of May, 1872. It was observed flying round a tall chimney, and attracted the attention of a number of mill-hands by its bright colour. It appeared to be a solitary bird and not to have a mate with it.

Range outside the British Islands.—An inhabitant of the mountains of Southern Europe, extending into Central Asia as far east as China, and found in nearly all the mountain-chains eastwards from the Caucasus. It is also an inhabitant of Abyssinia to the southward. The northward range of the species in France, as Mr. Howard Saunders has recently pointed out (Bull., Brit. Orn. Club, i., p. xlix), is more extended than is generally supposed, and it has been noticed on the Rhine as far north as Coblentz; so that its appearance in England is not so strange as might otherwise have been imagined.

Habits.—Everyone who has had the opportunity of observing this bird in a state of nature, agrees that it is a most beautiful object in the mountainous localities which it frequents, the bright red on the wings rendering it generally conspicuous. Like other Creepers, its food consists of small insects, such as spiders and beetles, while Bailly, the ornithologist of Savoy, says that it also devours ants' eggs and small worms, sometimes also capturing an insect on the wing. The same observer states that its cry resembles the syllable *pli pli pli pli*, a note like that of the Lesser Spotted-Woodpecker. On the face of the rocks which the bird frequents it climbs in a zigzag fashion, sometimes head-downward, "with a crab-like sidling motion," according to Canon Tristram, "rapidly expanding and closing its wings in a succession of jerks, and showing its brilliant crimson shoulders at each movement." The flight of this species is described as very peculiar, and more like that of a Butterfly.

Nest.—Placed in the crevices of rocks, sometimes in perfectly inaccessible positions. Mr. Seebohm writes: "A handsome nest of this bird in my collection is very elaborately built. Its chief material is moss, evidently gathered from the rocks and stones, intermingled with a few grasses, and compactly felted together with hairs, wool, and a few feathers. The lining is almost exclusively composed of wool and hair, very thickly and densely felted together. The nest is about one and a half inches deep inside, and the internal diameter is about three inches; outside it measures two and a half inches in depth, and is about six inches in diameter.

Eggs.—Three to five in number. Almost pure white, save for certain tiny black or reddish-brown dots, scarcely perceptible on some eggs, and sparsely scattered over the surface of others, in no case very perceptible. Axis, 0·8–0·85 inch; diam., 0·55.

THE NUTHATCHES. FAMILY SITTIDÆ.

These little birds hold an intermediate position between the Creepers and the Tits. They have a soft tail like the latter, not a spiny tail like the Creepers, and they differ from both the above-mentioned families in having a wedge-shaped and Woodpecker-like bill, with which they are enabled to hammer and prise off the bark of trees in a manner which would not disgrace their larger Picarian relatives.

The Nuthatches are chiefly inhabitants of the northern parts of both Hemispheres, extending in America as far south as Mexico; and, in the Old World, they are plentifully represented in the Himalayas, while in the mountains of Burma the largest known species of the genus, *Sitta magna*, is found. In the Indian region an allied genus, *Dendrophila*, is plentifully distributed, finding in Madagascar an outlying and isolated representative in the genus *Hypositta*, while in Australia and New Guinea occurs the genus *Sitella*.

THE TRUE NUTHATCHES. GENUS SITTA.

Sitta, Linn., Syst. Nat., i., p. 177 (1766).

Type, *S. europæa*, Linn.

Of the European Nuthatches there are four species, two of which are southern and two northern. Of the former, both of which are black-headed, *Sitta krueperi* is an inhabitant of Asia Minor, and *Sitta whiteheadi* of the high pine-forests of Corsica. Of *Sitta cæsia*, the distribution is given below, and *Sitta europæa*—with certain variations—extends from Scandinavia, across Asia, to Kamtchatka.

THE NUTHATCH. SITTA CÆSIA.

(*Plate XIV.*)

Sitta europæa, Lath., Ind. Orn., i., p. 261 (1790); Macg., Br. B., iii., p. 48 (1840); Newt. ed. Yarr., i., p. 473 (1873); Wyatt, Brit. B., pl. 9, figs. 1, 2 (1894).

Sitta cæsia, Meyer; Dresser, B. Eur., iii., p. 175, pl. 119 (1873); B. O. U. List Br. B., p. 28 (1883); Seeb., Brit. B., i., p. 523 (1883); Gadow, Cat. B. Brit. Mus., viii., p. 347 (1883); Lilford, Col.Fig. Brit. B., pt. viii. (1888); Saunders, Man., p. 105 (1889); Wyatt, Brit. B., pl. 9, fig. 1 (1894)

Adult Male.—General colour above clear grey or slaty-blue, including the wings and centre tail-feathers; quills dusky-brown, externally slaty-blue, the primaries whitish near the base of the outer web; tail-feathers, except the centre ones, black, with a grey tip, the inner web of the three penultimate feathers white at the tip, the outermost tail-feathers with a white sub-terminal band extending obliquely across both inner and outer webs; over the eye a faint streak of greyish-white; a black band enclosing the lores and the feathers below the eye, extending in a broad line down the sides of the neck; cheeks and throat ashy-white; remainder of under surface of body light fawn-colour or isabelline; the flanks vinous chestnut; under tail-coverts white, mottled with chestnut edges to the feathers; under wing-coverts like the breast, with ashy-white bases, and having a large patch of black near the edge of the wing; quill-lining ashy white; bill slaty blue, the lower mandible paler; feet pale reddish-brown; iris hazel. Total length, 5·8 inches; culmen, 0·8; wing, 3·4; tail, 1·7; tarsus, 0·8.

Adult Female.—Similar in colour to the male. Total length, 5·4 inches; wing, 3·35.

Young.—Similar to the adults, but with paler and more yellowish feet, the colours all duller, the black streak on the sides of the head and the chestnut flanks not so strongly marked as in the adults.

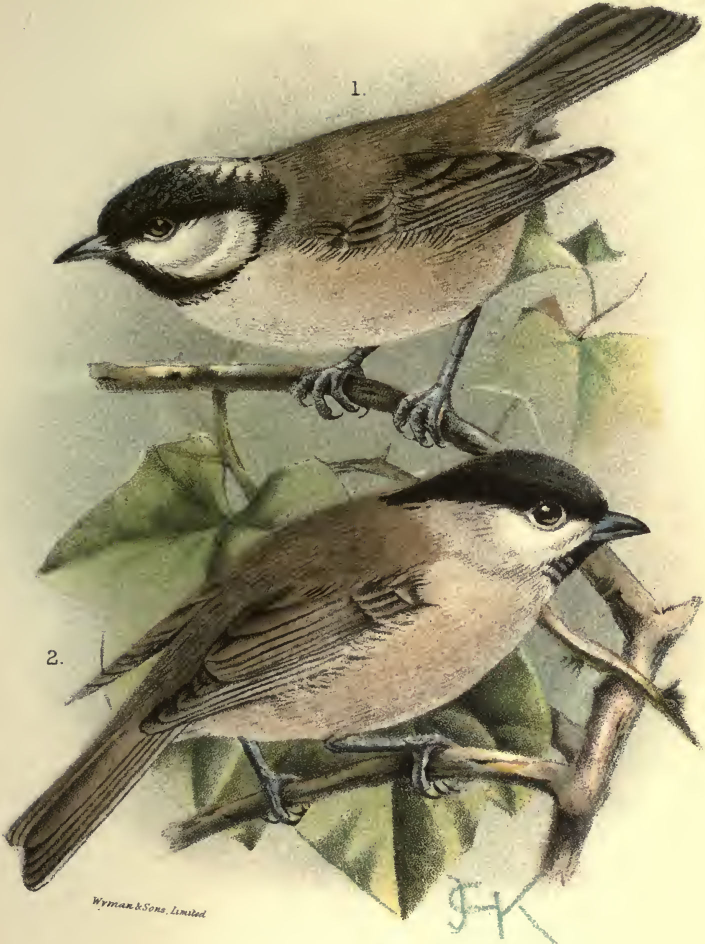
Range in Great Britain.—Pretty generally distributed over England, but becoming rarer in the north, scarcely known in Scotland, and altogether absent in Ireland. Mr. Howard Saunders says that the species appears to have decreased in numbers in the northern counties of late years, but in other parts of England it is increasing. It has been obtained only in the south of Scotland, in Berwickshire and Haddingtonshire, though there are one or two other records.

Range outside the British Islands.—The distribution of our Nuthatch on the continent of Europe is somewhat singular and interesting. It is spread over Southern and Central Europe, and extends eastward as far as Asia Minor and Palestine, northward to the Baltic Provinces as far as the peninsula of Jutland. Here its range coalesces with that of the Scandinavian Nuthatch (*Sitta europæa*), a species which has the under-parts white, and which ranges from Scandinavia and Northern Russia, across Siberia to Japan and Kamtchatka. Gradual variations in plumage occur throughout the range of the White-breasted Nuthatches, which have been divided into several races and species, but Mr. Seebohm affirms that intermediate forms occur between all of them, not excepting *Sitta europæa* and *S. cæsia*.

Habits.—These are a combination of the habits of a Tit and a Woodpecker. Like the former bird, the Nuthatch seeks diligently for its insect food on the trunks and branches of trees, over which it runs like a Woodpecker, with this difference, that its tail is not pressed into the service of climbing a tree, nor does it gradually ascend from the bottom to the top, as a Woodpecker so often does. On the contrary, a Nuthatch will generally be found in the higher branches, and will work its way from the end of the branch down towards the trunk, and is just as much at home on the under side of a limb as it is on the upper. Its movements are like those of a Mouse, rather than those of a bird, and it often runs, head-downward, or hangs on the under side of a branch and hammers away at the bark with its powerful little bill. The noise produced by one of these birds, when tapping at a tree, is really astonishing for a bird of its size, and, if undisturbed, it can be approached pretty closely. We have often watched a Nuthatch at work, and the pieces of dead bark which the bird prises off with its wedge-shaped bill, are sometimes as large as the bird itself. Its general food consists of insects, and in the winter the Nuthatches join the wandering parties of Tits and Creepers which traverse the woods in search of food. As a rule, however, the Nuthatch evinces a partiality for park-land and old timber, and its cheerful note, often repeated as it runs along a bough, sounds like "t'wee, t'wee, t'wee." It has also a scolding note, or note of alarm, not unlike the churr of a Warbler. In the autumn it feeds on hazel-nuts and beech-mast, breaking them open by constant hammering, and, like Tits, the Nuthatches can be tempted to the vicinity of houses in winter, and become quite interesting by their tameness.

Nest.—The nesting commences in the middle of April, a

PLATE XVI.



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1. COAL TIT. 2. MARSH TIT.

hole in a tree or wall being selected, and, in the former instance, the entrance to the nest is plastered up by the birds, leaving only a small hole for ingress. The nest is scarcely worthy of the name, consisting only of a few grasses or dead leaves. The most remarkable nest of a Nuthatch is to be seen in the Natural History Museum, to which it was given by the late Mr. F. Bond as a natural curiosity. It is built in the side of a haystack, to which the birds had carried as much as eleven pounds' weight of clay, and had thus constructed a solid nest in this apparently unfavourable position.

Eggs.—Five to eight in number. Ground-colour pure white, thickly spotted with rufous, with underlying spots of grey. The rufous markings are generally large and bold, and often encircle the larger end of the egg, but in many clutches the markings consist of a sprinkling of red dots all over the egg, occasionally relieved by some larger spots of dark rufous. Axis, 0·7–0·85 inch; diam., 0·5–0·6.

THE TITS. FAMILY PARIDÆ.

The members of this family are generally distributed over the northern parts of the Old and New World, ranging as far south as Southern Mexico in America, and in the Old World all over Europe, Africa, and Asia, as far as the Indo-Malayan Islands. The Tits are remarkable for their powerful little conical bills, which are densely beset with feathers at the base, so as to entirely hide the nostrils. The tarsus is scutellated. The family may be roughly divided into True Tits, Crested Tits, Long-tailed Tits, and Penduline Tits, all but the latter group being represented in England. The Reedlings (*Panurus*) are also generally classed in this family, but have little to do with the other *Paridæ*. By some recent writers, notably by Mr. Oates, the Tits have been placed in close proximity to the Crows. With these birds, in our humble opinion, they have little in common, beyond a certain carnivorous propensity.

THE TRUE TITS. GENUS PARUS.

Parus, Linn., Syst. Nat., i., p. 341 (1766).
Type, *P. major*, Linn.

The genus *Parus* includes not only the True Tits, such as

P. major and *P. cæruleus*, but also the Coal-Tits, of which *P. ater* is the type, and the Marsh-Tits, of which *P. palustris* is the typical representative. The range of the genus *Parus* is, therefore, coincident with that of the family. They are all builders in holes of one kind or another, and their eggs are all of a similar type, and, in most cases, numerous.

THE GREAT TIT. PARUS MAJOR.

Parus major, Linn., S. N., i., p. 341 (1766); Dresser, B. Eur., iii., p. 79, pl. 106 (1871); Newt. ed. Yarr., i., p. 479 (1873); B. O. U. List Br. B., p. 26 (1883); Gadow., Cat. B. Brit., viii., p. 19 (1883); Seeb., Br. B., i., p. 463 (1883); Lilford, Col. Fig. Brit. B., pt. vi. (1888); Saunders, Man., p. 95 (1889); Wyatt, Brit. B, pl. 8, fig. 2 (1894).

Parus fringillago, Macg., Br. B., ii., p. 425 (1839).

Adult Male.—General colour above green, inclining to yellow towards the nape, where there is a patch of white; rump and upper tail-coverts greyish-blue, like the tail-feathers, which have the shafts and the inner webs black, the outer tail-feathers white along the outer webs and at the tips; wing-coverts bluish slate-colour, the greater series darker, and tipped with yellowish-white; primary-coverts and quills dusky, externally edged with slaty-blue, the inner secondaries with greenish; crown of head, sides of neck, throat and fore-neck black with a gloss of blue, and relieved by a large white patch, which occupies the cheeks and ear-coverts, and is very conspicuous; rest of under surface of body yellow, the centre of the breast and abdomen glossy blue-black; flanks greenish; vent white; thighs and under tail-coverts black; under wing-coverts white; axillaries yellow; bill black; feet leaden-grey; iris dark brown. Total length, 5·5 inches; culmen, 0·5; wing, 2·85; tail, 2·4; tarsus, 0·75.

Adult Female.—Similar to the male, but distinguished by the narrower and duller black streak down the centre of the abdomen. Total length, 5·3 inches; wing, 2·85; tarsus, 0·8.

Young.—Coloured like the adults, but much more dingy in appearance, with the patch on the hind-neck and sides of face yellow instead of white, and the central streak on the under-parts dusky black, and not so strongly marked as in the adults.

NOTE.—The Great Tit is the largest of the family in England, and is easily distinguished by the black head and the black line which parts the centre of the yellow breast.

Range in Great Britain.—May be considered a constant resident in all three kingdoms, though it becomes rarer in the north of Scotland, and is only an accidental visitor to certain islands of the north, such as the Isle of Skye and the Shetlands.

Range outside the British Islands.—The Great Tit is distributed over Europe, and extends eastward through Asia across to the Pacific Ocean, being found in Palestine, Persia, and Central Asia, but does not occur in any part of the Indian Region, being replaced by allied forms in the Himalayas, in China, and the Japanese Islands. Its northernmost range is the Arctic Circle in lat. 66½°, and it gradually decreases towards the east. Thus Mr. Seebohm describes its occurrence in the valley of the Yenesei up to lat 58°, and on the Pacific coast the most northerly point known is Middendorff's record of 55°.

Habits.—The Great Tit is a very cheery bird, and is found in all kinds of places, visiting along with the Blue Tit even the parks in the centre of London. It can at any time be enticed into gardens and the neighbourhood of houses, by the simple expedient of suspending some morsels of fat, or little bladders of lard, and it is while clinging to these, in every imaginable attitude, that the graceful motions of this active little bird can best be studied. During the breeding season it is rather shy, and does its best to escape observation, but in the winter it becomes much more in evidence, and its bright colours render it a somewhat conspicuous object as it frequents the woods or the bushes in the neighbourhood of a house. Even in winter it is often found in pairs flying about in the undergrowth of the woods, but it not unfrequently joins in a merry party of other Tits, Creepers, and Nuthatches as they course through the woods on a fine winter's day. This habit of assembling is not confined to Tits in this country, for we remember on one occasion in the pine-woods of Simla, where there was generally silence and an absence of bird-life, how pleasing it was to hear in the distance the approach of a party of Tits and to see them pass along with some of their friends, the Creepers, within a few yards' distance. Like the Bullfinches and Chaffinches, the Tits are not regarded by gardeners with a friendly eye, on account of the number of buds which they are said to destroy in the spring, but they are generally most useful birds, and devour a vast number of insects, the young being entirely fed on grubs and small caterpillars.

Nest.—This is often an extraordinary structure. It is always placed in a hole, generally of a wall, or in a tree, and Mr. Seebohm says that the deserted nests of Crows and Magpies are sometimes utilised, while it is occasionally found among the sticks in the foundation of Rooks' nests, and, according to Mr. Dixon's observations, it has been known to nest in a hole in the ground. The variation in the nesting place of the Great Tit is altogether extraordinary, for, while Montague asserts that the eggs are sometimes deposited on the powdered wood at the bottom of a hole without any attempt at a nest, there is no bird, which, for its size, can build a more laborious structure. Given a hollow, no matter of what dimensions, the Great Tit will accumulate materials and fill it up to within a short distance of the top. There is a certain railing in Hyde Park where a defect in the iron-work has left a small hole in one of the posts. This is the annual nesting place of a pair of these little birds. Some day, we have no doubt, the interior of this post will be found to be filled nearly to the brim with moss, and we have no hesitation in betraying the secret of the birds, as it will not easily be detected, and it was only by accident that we discovered the nesting place. Passing in a cab, we saw a Great Tit alight on the post, and, apparently surmising that we were not likely to arrest our journey to search for its nest, the bird turned sharply round, and disappeared like a flash of lightning backwards down the hole.

An instance has been known where a pair of Great Tits built a nest in a disused pump, and gradually filled up the inside of the latter for several feet with moss. Another curious selection of a nesting place is to be seen in the Natural History Museum at South Kensington. The bird selected the inside of a wooden post-box at Rowfant, in Sussex, and occupied it for three years in succession, filling up more than half the box with moss, regardless of the letters which were posted every day, and dropped on to the back of the sitting bird. The latter never moved when the box was opened to take out the letters. Another favourite breeding place of the Great Tit is the inside of a large flower-pot or the stand of a statue in a garden. Both these situations demand a great deal of labour in filling up the inside to the required height, and we have known one instance where the hollow pedestal of a statue in the pleasure-grounds of Sir Edward Shelley's seat at Avington was selected. Inside this pedestal the birds had filled up the base with moss to the extent of nearly a foot, and had excavated more than one nest. There were only two young ones in one of the nests. A few years ago a second instance of multiple nests of the Great Tit came under our notice, when a pair occupied a large flower-pot. This pot, with the base filled up with moss, and its three nests, is now in the British Room at the British Museum. Mr. Dallen, who found the nest, declared that there were eggs in all three of the cups, but we fancy that they must have been placed there by someone who had examined the nest, and not by the birds themselves, especially as there is every appearance of the three nests having been used in successive years. There is, therefore, some method in the madness of these little birds, for, when once the wide base of the flower-pot has been filled with moss, there is always a foundation in which to sink another nest in the following year.

Eggs.—From five to nine in number, sometimes, according to Mr. Seebohm, as many as eleven being laid. Ground-colour white or creamy-white, with numerous red spots and faint underlying grey spots. As a rule the rufous spots and dots are universally distributed over the egg, but occasionally form a ring round the larger end. The variation in intensity of the rufous colour is very marked in a series, but, as a rule, the eggs in the same clutch are all similar. Axis, 0·75 inch; diam., 0·6.

THE BLUE TIT. PARUS CÆRULEUS.

(*Plate XV.*)

Parus cæruleus, Linn., S. N., i., p. 341 (1760); Macg., Br. B., ii., p. 431 (1839); Dresser, B. Eur., iii., p. 131, pl. 113, figs. 1, 2 (1871); Newt. ed. Yarr., i., p. 483 (1874); B. O. U. List Br. B., p. 27 (1883); Gadow, Cat. B. Brit. Mus., viii., p. 27 (1883); Seeb, Brit. B., i., p. 468 (1883); Saunders, Man., p. 101 (1889); Wyatt, Brit. B., pl. 8, fig. 1 (1894).

Adult Male.—General colour above light green; the wings and tail blue, the greater coverts tipped with white, forming a bar, the inner secondaries also tipped with white; crown of head blue, the forehead whitish, the crown also surrounded with a ring of greyish-white, followed by a band of blue, which commences behind the eye as a narrow stripe and widens out on the nape as a broad band, the latter extending down the sides of the neck, and occupying the chin and throat; behind this blue-black band is an indistinct patch of greyish-white; the whole of the cheeks, sides of face, and ear-coverts greyish-white; remainder of under surface of body yellow, greener on the flanks, whiter on the centre of the breast and abdomen; in the centre of the breast a streak of dusky blue; under wing-coverts yellow; quill-lining white; bill dusky horn-colour; feet leaden-blue; iris dark brown. Total length, 4·5 inches; culmen, 0·35; wing, 2·5; tail, 1·85; tarsus, 0·65.

Adult Female.—Like the male, but a trifle duller in colour.

Young.—Much more dingy than the adults; the crown and neck-markings dusky olive; the whole of the sides of the face, which are white in the adult, are pale yellow in the young, the under surface being entirely of the latter colour, without any central streak of dusky blue on the breast.

Range in Great Britain.—Universally distributed throughout the three kingdoms, and very common in Ireland. It is also found throughout Scotland, even to the far north, but has not yet been recognised in the Outer Hebrides. A western migration from the Continent takes place in autumn, when numbers of Blue Tits pass over Heligoland, and the birds arrive on our east coasts in quantities.

Range outside the British Islands.—Found generally throughout Europe, reaching eastward to the Ural Mountains and the Caucasus, in Russia as high as 61° N. lat., and in Norway even further north, to 64°. To the south of the Mediterranean the place of the Blue Tit is taken by allied species, such as *P. ultramarinus*, and in the Canaries and Madeira by other forms, *P. teneriffæ*, &c.

Habits.—The lively little Blue Tit, or Blue-cap, as the bird is called in many parts of the country, is perhaps the best known of the family, and is no stranger to the dweller in London, as it is not only to be seen in the parks, but also in the gardens of the west-end of the town. We have even seen a Blue Tit in Russell Square, close to the British Museum, in Bloomsbury, on more than one occasion. Its note is one of the invariable attractions of a walk in early spring, for although it is not varied to any great extent, it is so clear and like the tinkling of a little bell, that its cheeriness is infectious. It is at this season of the year that numbers of the birds are shot, for it is supposed to devour numbers of the buds of gooseberry and other bushes and fruit-trees; and that a good deal of damage is done is unquestionable, though it is also said that the Tits pull the buds to pieces in their search for insects, and not from any wanton love of destruction or from any desire for the buds themselves. During the winter season the Blue Tits form family parties, or attach themselves to the roving squadrons of Creepers, Nuthatches, and other kinds of Tits which frequent the woods. Although generally subsisting on insects, the Blue Tit will feed on almost anything, and will hammer out a hole of considerable size in a pear or other fruit-tree, while it is amusing to see the little bird assault a seed or any hard substance, which it generally holds between its feet, and pegs away at it vigorously. In the defence of its nest and young it is a plucky bird, raising its crest and hissing and biting furiously; indeed, if the old bird be taken off the nest, it is wonderful with what tenacity it will hang on to the hand of the aggressor.

Nest.—A rough structure of moss and grass, but warmly lined with feathers, placed in the hole of a tree or of a wall, while sometimes the bird selects a hole in the ground. The entrance is always very small, even for the tiny size of the bird. The way in which the numerous progeny contrive to pack themselves away in the nest is as wonderful as the skill with which the indefatigable little parents manage to bring them up.

Eggs.—From five to eight in number, sometimes as many as twelve being found. The eggs, as might be expected, are small editions of those of the Great Tit, but the reddish markings are much less developed, and are represented in many cases by a sprinkling of tiny dots, which are sometimes also collected at the large end of the egg, leaving the small end unspotted. Axis, 0·6 inch; diam, 0·5.

THE EUROPEAN COAL-TIT. PARUS ATER.

Parus ater, Linn., Syst. Nat., i., p. 341 (1766); Gadow, Cat. B. Brit. Mus., p. 40 (1883, pt.); Lilford, Col. Fig. Br. B., pt. iv. (1887, pt.).

Adult Male.—General colour above slaty-blue, a little tinged with olive on the rump and upper tail-coverts; lesser and median wing-coverts slaty-blue like the back; the greater coverts dusky, externally washed with slaty-blue, and, like the median series, tipped with white, forming a double wing-bar; quills dusky-brown, externally edged with olive, the inner secondaries tipped with dingy white; tail feathers dusky, washed with ashy-grey; crown of head and hind-neck glossy blue-black, divided in the centre from the nape to the hind-neck by a broad patch of white; lores, cheeks, and sides of face white, extending down the sides of the neck; entire throat black, spreading on to the sides of the upper breast; breast and abdomen greyish-white, the sides of body and flanks, as well as the under tail-coverts, isabelline; under wing-coverts and quill-lining white; bill black; feet leaden-grey; iris hazel. Total length, 4·2 inches; culmen, 0·35; wing, 2·45; tail, 1·75; tarsus, 0·6.

Adult Female.—Not to be distinguished from the male in colour, but the gloss on the head a little less marked. Total length, 4·2 inches; wing, 2·4.

Young.—Similar to the adults, but yellow below; a little more rufescent on the flanks; the white sides of the face and nape-patch of the adults replaced by pale yellow; the black of the head more dingy, and the black of the throat and chest represented in the young birds by a patch of dusky black on the throat only.

Range in Great Britain.—An occasional visitor from the Con

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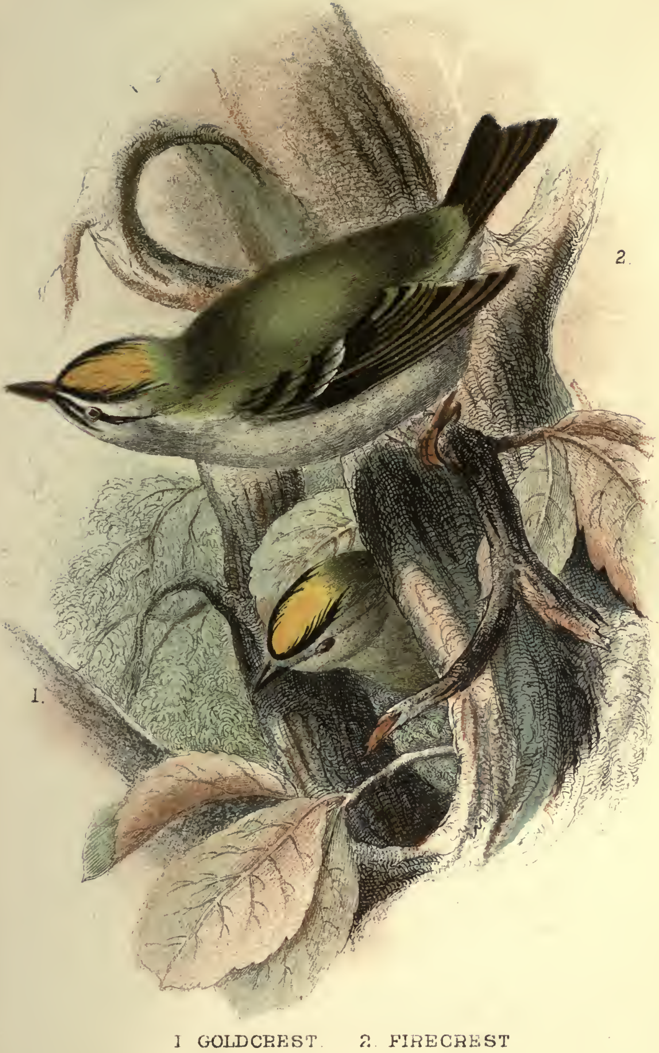
PLATE XVII.



1 GOLDCREST. 2. FIRECREST

tinent to the east coast. We have seen some specimens killed in summer in the British Islands which were scarcely to be told from the grey-backed Coal-Tits of the Continent, and Mr. Howard Saunders doubts the migration of the true *P. ater* to our shores, and believes that we have grey-backed as well as olive-backed individuals in our islands. We have carefully looked through the series of Coal-Tits in the British Museum, and on comparing the series of true *P. ater* with a number of *P. britannicus*, we find no difficulty in recognising them at any season of the year. British birds occasionally, during the breeding season, when the plumage gets worn, lose somewhat of their olive-brown dress, which is so distinct in winter, and are greyer than at the latter season, but they never attain the clear slaty-blue colour of their continental relatives, and we reiterate the opinion which we held in 1872, when we first described the British bird as distinct, that the two forms are well worthy of recognition.

Range outside the British Islands.—Generally distributed in Europe, but replaced in Algeria by *Parus ledouci*, and in Cyprus by *P. cypriotes*. It is found as high north as 65° N. lat. in Scandinavia, and extends throughout Europe and Northern Asia, the form of Eastern Siberia and Japan having a slightly longer crest and being distinguished as *P. pekinensis*. In the Himalayas several representative species of Coal-Tits are found.

Habits.—Similar to those of *P. britannicus*.

Nest.—Similar to that of *P. britannicus*.

Eggs.—Six to ten in number, scarcely distinguishable from those of the Blue Tit; white, spotted with rufous in exactly the same way as the eggs of the latter bird, but the red markings on some of the eggs occasionally very faint, and, in most clutches, showing two shades of rufous. Axis, 0·6-0·7 inch; diam, 0·5.

THE COAL-TIT. PARUS BRITANNICUS.

(*Plate XVI., Fig.* 1.)

Parus ater (nec. L.), Macg., Br. B., ii., p. 440 (1839); Newt. ed. Yarr., i., p. 489 (1874 pt.); Gadow, Cat. B. Brit. Mus., viii., p. 40 (1883 pt.); Lilford, Col. Fig. Brit. B., pt. iv. (1887); Saunders, Man., p. 97 (1889, pt.).

Parus britannicus, Sharpe and Dresser, B. Eur., iii., p. 93, pl. 107, fig. 2 (1872); B. O. U. List Br. B., p. 26 (1883); Seeb., Brit. B., i., p. 472 (1883); Wyatt, Brit. B., pl. 4, fig. 3 (1894).

Adult Male.—Similar to *P. ater*, but distinguished by the olive-brown, instead of slaty-blue, back, and by the richer buff-colour of the sides of the body. Total length, 3·9 inches; culmen, 0·4; wing, 2·35; tail, 1·65; tarsus, 0·65.

Adult Female.—Similar to the male in colour. Total length, 3·8 inches; wing, 2·35.

Young.—Differs from the adult exactly as the young of *P. ater* differs from the adults, having the white parts of the plumage pale sulphur-yellow.

NOTE.—Like the Great Tit, the present species has a black head, a white nape-patch, white cheeks, and a black throat. It may, however, always be distinguished from that species by its much smaller size and plain-coloured breast, the under surface not being yellow as in the Great Tit, nor has it the very evident black band down the centre of the breast and abdomen.

Range in Great Britain.—Found nearly everywhere, but in most places not so plentiful as the other species of British Tits. It is met with especially in Scotland, as far north as Sutherlandshire and Caithness, but is not found in the Outer Hebrides, nor in the Shetland or Orkney Isles.

Habits.—In most parts of England the Coal-Tit is a rare bird, or at least is not so often noticed as the other species. Since the severe winter of 1881 there are many places, where the Coal-Tit was comparatively plentiful, which know it no more, whereas in the same districts the Marsh-Tit has increased in numbers. Near London the latter bird is not often seen, but Coal-Tits frequent our garden at Chiswick every winter, and share the food which we supply for Tits in general. In the pine-woods of Scotland, however, the Coal-Tit is a common species, and its call-note is often heard, without which signal it would be easy to pass the bird over, as it is not only of such small size as to escape observation, but it frequents the thickest woods and is not easily seen. Occasionally it comes to the outside of a fir-tree, when it may be observed hanging on to a cone and extracting its food. As is the case with most

Tits, the food consists mainly of insects, and its ways of feeding are like those of its relations, save that it frequents the birch-woods more particularly than the latter. We have also procured specimens on the alder-trees in winter, when the bird was in company with Siskins and Redpolls.

Nest.—A loosely-made structure of grasses and moss, and plentifully lined with feathers. Like that of other Tits, it is placed in a hole, either of a tree or a wall. We have ourselves found but few nests of this species in the south of England, and borrow the following account from Mr. Seebohm: "Birch-woods are favourite haunts of this bird during the breeding-season, when the abundance of holes suitable for nesting purposes are most probably the chief attraction. Here, it may be, where a large limb has fallen into premature decay, leaving a hollow cavity in the parent stem, or where a trunk has been riven by the storm, the bird will build its nest. It will also select a hole in a large pine-tree, or in the decaying alders near the stream. Orchard-trees are more rarely chosen; but a hole in some stump of a hedgerow is a favourite place. The bird will also occasionally seek out a nesting-site in the ground, generally a hole under some half-exposed root or old stump. In some cases the bird will enlarge a hole for itself."

Eggs.—Five to eight in number, sometimes nine. White, spotted with rufous, the underlying dots being lighter rufous occasionally, the rufous markings very thickly distributed, generally towards the larger end of the egg. As with the other Tits, occasional clutches are very faintly marked.

THE MARSH-TIT. PARUS DRESSERI.

(*Plate XVI.*, *Fig.* 2.)

Parus palustris (nec. Linn., S. N., i., p. 341); Macg., Br. B., ii., p. 445 (1839); Dresser, B. Eur., iii., p. 99, pl. 108 (1871); Newt. ed. Yarr., i., p. 495 (1874); B. O. U. List Br. B., p. 27 (1883); Seeb., Brit. B., i., p. 476 (1883); Gadow, Cat. B. Brit. Mus., viii., p. 49 (1883); Lilford, Col. Fig. Brit. B., pt. vi. (1888); Saunders, Man., p. 99 (1889); Wyatt, Brit. B., pl. 8, fig. 3 (1894).

Parus palustris dresseri, Stejn., Proc. U. S. Nat. Mus., ix., p. 200 (1886).

Adult Male.—General colour above ruddy brown, paler and more isabelline on the rump and upper tail-coverts; wings light brown, the feathers externally edged with the brown colour of the back, slightly tinged with olive on the quills, the greater coverts with a faint tip of whitish, forming an indistinct wing-bar; tail-feathers ashy-brown with olive-brown margins; crown of head glossy blue-black, forming a cap which extends backwards down the nape; eyelids black, dotted with white; sides of face and ear-coverts ashy-white, like the under surface of the body, the sides of which are clear isabelline buff; chin and upper throat black; thighs, axillaries, and under wing-coverts like the sides of the body, the latter white near the edge of the wing; quill-lining ashy-white; bill black; feet leaden-grey; iris hazel. Total length, 4·5 inches; culmen, 0·35; wing, 2·45; tail, 1·95; tarsus, 0·6.

Adult Female.—Similar to the male in colour. Total length, 4·5 inches; wing, 2·4.

Young.—Has the colours of the adult, but has the cap duller black, not glossy, and confined to the crown of the head, not extending down the nape; the white colour of the under-parts very pure, and the light tips to the greater wing-coverts forming a distinct bar.

NOTE.—Dr. Stejneger has separated our British Marsh-Tit as a subspecies on account of its darker colour, more olive back, clearer and more buffish-brown rump, much browner flanks and shorter tail, the outer pair of tail-feathers being shorter than the others. On comparing a series of specimens from different localities of Europe we find that Dr. Stejneger's conclusions are borne out to a small extent. The differences in the case of the Marsh-Tits are not so marked as in the Coal-Tits, and as the former group vary much with locality and altitude, it may be that connecting links will be found between our British bird and its continental ally.

With regard to the shortness of the outer tail-feathers in the British bird, we find no difference, in this respect, between *P. dresseri* and *P. palustris* of the continent of Europe. The same may be said of the supposed difference in length of tail; our series in the British Museum does not confirm Dr. Stejneger's supposition. As regards the darker brown colour, this is undoubtedly a feature of the British Marsh-Tit, and the rump is more clearly marked than in the continental bird; the flanks are also more rufescent or buff. On these characters only can the British race be recognised, and we find some French examples exhibiting a similar tendency to dark coloration.

Range in Great Britain.—Generally distributed, and even common in some counties of England. In Scotland it becomes very local in its distribution, but, according to Mr. William Evans, it breeds as far as Dunipace, near Stirling, where Mr. Harvie Brown has pointed out to us the portion of his estate frequented by the species. In Ireland the only counties where it is met with are Antrim, Kildare, and Dublin.

Range outside the British Islands.—*Parus palustris* is generally distributed in South and South-western Europe, but is decidedly rare in the Mediterranean countries, though it occurs as far eastward as Greece and Asia Minor. In Scandinavia northward of about 61° N. lat., as far as the Arctic Circle, and in North-west Russia, according to Mr. Seebohm, is found the Alpine form, *Parus borealis*, which is also noticed in equally high latitudes in Switzerland. Mr. Trevor Battye says that in Sweden, where both species occur, the two birds have perfectly different notes and habits. From North-eastern Russia and across Siberia to China and Japan, there are other races which have been recognised by modern ornithologists, and certainly some of these are not more worthy of recognition than the English race, which has been called *P. dresseri*.

Habits.—The name of "Marsh"-Tit is by no means an apposite designation of this bird, for it is not a marsh-haunting species any more than the other British Tits, and we have found it often far away from any water, in the midst of the woodlands, consorting with other species of Tits, Creepers, and Nuthatches. Although we cannot say that we have ever seen it in the suburbs of London, like the Coal-Tit, it frequents every kind of locality in the country, and is seen in gardens, in the undergrowth of woods, or in bushes which fringe the country lanes. It seems to be somewhat of a migratory bird, as it appears on the east coast in autumn, and it is one of the Tits which passes over Heligoland.

The food of the Marsh-Tit consists principally of insects, but it is, like the other members of the family, really omnivorous, and in parts of the country where the bird is common it can be attracted to the vicinity of houses by hanging up a bone or a piece of fat. Mr. Howard Saunders says that this little bird prises off the scales of the rough bark of a Scotch fir in the pursuit of its insect food.

Nest.—Apparently a neater construction than that of most Tits, though composed of the same materials, viz., moss, wool, and hair. A willow-tree is often selected for its home, and the nest is not, as a rule, far from the ground. In a decayed tree it will often excavate its own hole, which is as neatly rounded as that of a Woodpecker, and there is frequently a second exit from the nest. The entrance hole is always remarkably small, as may be imagined from the kindly way in which the bird takes to a human skull when the latter is put up into a tree for its benefit, as we have known done by our friends, Wm. Birket Foster and Bryan Hook; the occipital foramen, the hole at the back of the skull, forms the entrance to this strange abode, and the skull being turned upside down, the nest of the Tit is amply sheltered by the palate of the deceased.

Eggs.—From five to eight in number. Ground-colour white, like china, rather thickly spotted with red and reddish-brown, the overlying spots being the brighter. Sometimes the egg is dotted all over with rufous, but very often the spots are collected at the larger end. Axis, 0·6–0·65 inch; diam., 0·45–0·5.

THE CRESTED TITS. GENUS LOPHOPHANES.

Lophophanes, Kaup., Natürl. Syst., p. 92 (1829).
Type, *L. cristatus* (Linn.).

The type-species of this genus, *L. cristatus*, shows such a preponderance of crest over the ordinary members of the genus *Parus*, that it can scarcely be said to belong properly to the latter genus, and the Crested Tit is only one of many large tufted-species which are found over the northern parts of Europe and of the New World. In the latter, they range as far south as Mexico, and in the Old World outside Europe there are several species in the Himalayan chain.

THE CRESTED TIT. LOPHOPHANES CRISTATUS.

Parus cristatus, Linn., Syst. Nat., i., p. 340 (1766); Macg., Br. B., ii., p. 450 (1839); Newt. ed. Yarr., i., p. 499 (1874);

B. O. U. List Br. B., p. 28 (1883); Gadow, Cat. B. Brit. Mus., viii., p. 27 (1883); Seeb., Brit. B., i., p. 481 (1883); Saunders, Man., p. 103 (1889); Lilford, Col. Fig. Brit. B., pt xvi. (1890); Wyatt, Brit. B., pl. 4, fig. 1 (1894).
Lophophanes cristatus, Dresser, B. Eur., iii., p. 151, pl. 115 (1871).

Adult Male.—General colour above olive-brown, clearer and more fulvescent on the rump and upper tail-coverts; wing-coverts and quills ashy-brown, washed with the same colour as the back, the primaries edged with ashy; tail-feathers ashy, edged with brown; head crested; sides of face, as well as the sides of the neck, ashy-white; the feathers of the crown black, tipped with white, the crest-feathers long, black, with a white edging; behind the ear-coverts a crescentic patch of black; throat black, connected to the nape by a line of black, which crosses the sides of the neck; remainder of under surface of body ashy-white, with the flanks and sides of the body ruddy isabelline, as well as the under tail-coverts; thighs and under tail-coverts white; bill black; feet leaden-grey; iris hazel. Total length, 4·3 inches; culmen, 0·45; wing, 2·6; tail, 1·9; tarsus, 0·75.

Adult Female.—Similar to the male in colour, but has a little less black on the throat, and a shorter crest Total length, 4·4 inches; wing, 2·5.

NOTE.—Between the Scotch specimens in the British Museum and others from the Continent we cannot find any difference in colour, and they all clearly belong to one and the same species.

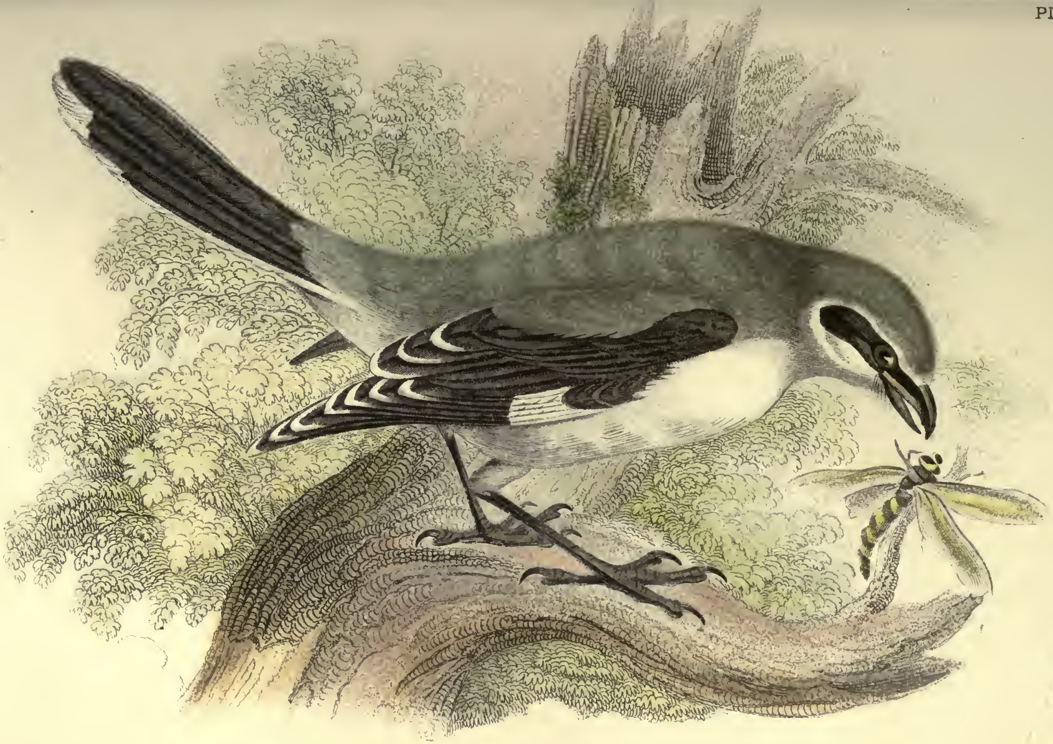
Range in Great Britain.— Resident only in the forests which clothe the valley of the Spey and the adjacent rivers. In other parts of Scotland, and also in various localities in England the Crested Tit has occurred in isolated instances. Some of these appear to be authentic, but only two cases of the occurrence of the bird in Ireland have been recorded.

Range outside the British Islands.—The present species is an inhabitant of the pine-forests of Europe, its northern range being about 64° N. lat., and extending to the Volga; it has also been found in Turkey, but has not been noted from Asia Minor, Greece, or Italy south of the Alps.

Habits.—Although principally known as an inhabitant of conifer-woods, the Crested Tit is likewise said to affect birch-trees, and in winter to wander into plantations and gardens; in some parts of the Continent it breeds in oak-trees, and in the vicinity of Gibraltar in the cork-woods.

Mr. Seebohm says that in the pine-woods of Arcachon, in South-western France, it is the commonest bird, and is often found in company with other Tits, Gold-Crests, Fire-Crests, and Creepers. He says: "They are very active birds, flitting from branch to branch, running over the pine-cones, in search of insects; and they seem to have taken a leaf out of the book of their associates the Creepers, and may often be seen on the trunks of the pines, where they search for insects in the crevices of the bark. Sometimes they run up the stems of the pines exactly as the Creepers do. It is not difficult to recognise the Crested Tit on the wing. In the bright sunshine, which is such a distinguishing feature of the Arcachon winters, the white edges of the black feathers of its head are generally very conspicuous when flying, and often enough when the little bird is hanging under a branch of a lofty pine, the outline of its erected crest is easy to see against the sky. The surest way, however, of detecting its presence is to listen to its note. The call-note is a not very loud *si*, *si*, *si*, which seems to be common to many of the Tits; but this is often followed by a spluttering note difficult to express on paper, which, as far as I know, is peculiar to the Crested Tit. It is a lame attempt at a trill, a sort of *ptur*, *re*, *re*, *re*, *ree*. The pine-trees in the Arcachon forest are tapped for their resin. Three or four longitudinal scores are made on the trunks; and these are lengthened as they dry up until they reach a considerable height from the ground. When the tree gets old the weather rots the part where the bark has been removed, and the trunk swells out and cracks, and all kinds of convenient nooks and crannies are formed, where Tits and other birds, who like such situations for their nests, can breed. Some of these trees in the old forests of La Teste attain a diameter of four and even five feet; and occasionally one comes across a fine old oak. The Crested Tits seem, however, to prefer the pines; and although the GREAT and the COAL-TITS are very fond of searching for insects on the ground amongst the fallen oak-leaves, I have never seen the CRESTED TIT on the ground. In the pine-forests

PLATE XVIII.



GREAT GREY SHRIKE.

of Pomerania and of the Alps I found this bird equally common."

Nest.—A very rough and inartistic mass of dry grass, with a little moss or wool, and occasionally a feather or two. The nest is nearly always placed in the hole of a tree, which the bird sometimes excavates for itself. At other times it nests in the foundations of large nests (Crows, or birds of prey), or even occupies deserted nests of Crows or Magpies, or even that of a Squirrel or a Wren, according to Mr. Seebohm.

Eggs.—From four to seven in number. The general appearance of the eggs separates them at a glance when they are placed side by side with those of the other British species of Tits, on account of the rufous marking being so pronounced. The eggs are very pretty, and have a white or pinkish-white ground, with bright purplish-red underlying spots, and overlying spots of brighter red, sometimes confluent, and forming a patch at the larger end. The majority of clutches are boldly marked, and there are not so many pale clutches of eggs as are met with in all the species hitherto considered. Axis, 0·6–0·65 inch; diam., 0·45–0·5.

THE LONG-TAILED TITS. GENUS ÆGITHALUS.*

Ægithalus, Hermann, Obs. Zool., i., p. 214 (1804).

Type, *Æ. caudatus* (Linn.).

The long tail is the principal character of the genus *Ægithalus;* it is always longer than the wing, whereas in the genus *Parus* the wing is longer than the tail. It is a Palæarctic genus, and the uniting of the Himalayan genus *Ægithaliscus* with *Ægithalus* seems to us to be a great mistake, as from the measurements given by Dr. Gadow himself in the British Museum "Catalogue of Birds," the wing and tail are evidently equal in length in *Ægithaliscus*. The range of the genus *Ægithalus* may, therefore, be said to extend over Europe, and eastwards through Siberia to the Pacific and to the Japanese islands. It is a very curious fact, often remarked upon by ornithologists, that in Japan, so far away from Great Britain, there re-occur certain striking elements of the British Avi-fauna. Many species are precisely the same, others are closely allied and representative. Thus our English Siskin and Brambling are found in Japan, while our Greenfinch is replaced by a closely allied form. Our Hawfinch is scarcely distinguishable from the bird of the Japanese islands, and in the case of the Long-tailed Tit, the Japanese species, *Ægithalus trivirgatus*, is more like its British ally, *Æ. vagans*, than the white-headed form, *Æ. caudatus*, which is the species of the intervening area from Scandinavia to Eastern Siberia, though Mr. Seebohm recognises a Siberian form, *Æ. macrurus*.

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* However annoying it may be to have to change well-known generic and specific names, there is no help for it, when the names are beyond question correct. Thus we consider that Dr. Stejneger has proved his point (Proc. U. S. Nat. Mus., ix., p. 382, 1886) with regard to the supersession of *Acredula* of Koch by *Ægithalus* of Hermann. The "Observationes" of the latter author is a work far more entitled to respect than the nominal lists of Forster, Leach, and others, and it is not Hermann's fault, but that of his successors, that his generic name was not recognised sooner. *Ægithalus* was employed for the Penduline Tits by Boie in 1822, but, being preoccupied, must be replaced by *Remiza* of Stejneger (*l.c.*, p. 387). We do not agree with Dr. Stejneger that the "*Pipria* (?) *europæa*" of Hermann was the British species, usually called *Acredula vagans* (Leach). The only species known in Switzerland appears to be the true *Æ. caudatus* (L.), *cf.* Fatio & Studer, Cat. Ois. Suisse, p. 22.

Æ. vagans, the British species, was at first supposed to be confined to Great Britain, but it certainly extends over France and into Northern Italy, to judge by the specimens in the British Museum, but little really is known of its distribution. In the Rhine Provinces of Germany, Count von Berlepsch has found a form which he pronounces to be intermediate between *Æ. vagans* and *Æ. caudatus* of Northern Europe. He has very kindly sent several specimens to the Museum, and we must say that we are not yet convinced of the intergradation of the two races. The young of both are indistinguishable, and have a black band on each side of the crown. In adult *Æ. caudatus* this entirely disappears, and the head becomes snow-white, while in *Æ. vagans* the black band becomes permanent in the adults, and is one of the features of the species. The specimens which are considered to be intermediate between the two forms have a white head with more or less remains of a lateral stripe on the crown. This may very well be the remains of the immature plumage, and does not necessarily afford evidence of interbreeding or even of the imperfect segregation of the two forms. The specimens sent to the British Museum by our friend Count von Berlepsch have the other character of the true *Æ. caudatus*, viz., the whiter secondaries, and there is nothing, therefore, to show that they are not the immature birds of the northern race, *Æ. caudatus*.

In Spain and the greater part of Italy a distinct species of Long-tailed Tit, *Æ. irbii*, occurs. How far this form extends into France has never yet been determined, but that it occurs in that country is shown by a specimen which we ourselves shot at Mongeron (Seine-et-Oise), not far from Paris.

The members of the genus *Ægithalus* do not breed in holes, but make a moss nest in the open, and in this feature the genus *Ægithaliscus* follows suit.

THE LONG-TAILED TIT. ÆGITHALUS VAGANS.

Mecistura vagans, Leach, Cat. Mamm, &c., Brit. Mus., p. 17 (1816).

Mecistura rosea, Blyths ed. White's Nat. Hist. Selborne, p. 111 (1836).

Mecistura longicaudata, Macg., Br. B., ii., p. 454 (1839).

Acredula caudata (nec. Linn.), Newt. ed. Yarr., Br. B., i , p. 504 (1874); Lilford, Col. Fig. Brit. B., pt. iv. (1887); Saunders, Man., p. 93 (1889).

Acredula rosea, Sharpe, Ibis, 1868, p. 300; Dresser, B. Eur., iii., p. 63, pl. 103 (1872); B. O. U. List Br. B., p. 25 (1883); Gadow, Cat. B. Brit. Mus., viii., p. 61 (1883); Wyatt, Brit. B., pl. 7 (1894).

Adult Male.—General colour black and rose-colour above, the hind-neck and mantle being glossy black; the scapulars, lower back, and rump rosy, always more or less mottled with the blackish bases to the feathers; upper wing- and tail-coverts black; quills black, the inner secondaries rather broadly edged with white; tail-feathers black, the three outer ones white along the outer web and diagonally across the tip, the white increasing towards the outermost; crown of head dull white; lores and a broad eyebrow black, extending in a band along the side of the crown; feathers round the eye purer white; ear-coverts, cheeks, and throat, ashy-white, with some blackish streaks on the foreneck; remainder of under surface of body light rosy, the under tail-coverts deeper and more chestnut; under wing-coverts and quill-lining white; bill, black; feet, dark brown; iris, hazel; eyelids red. Total length, 5·5 inches; culmen, 0·3; wing, 2·45; tail, 3·2; tarsus, 0·65.

Adult Female.—Similar to the male. Total length, 5·2 inches; wing, 2·35.

Young.—Differs from the adult in being duller, blackish-brown where the adult is black, and not having any of the rosy colour on the back and under-parts.

Range in Great Britain.—Generally distributed over the three kingdoms, becoming rarer in the north of Scotland, but not yet recorded from the Outer Hebrides, and apparently not known in the Orkney and the Shetland Isles. In the latter Dr. Saxby once observed a party of four Long-tailed Tits in Unst, in April, 1860, but whether they were the British form, *Æ. vagans*, or the Continental *Æ. caudatus*, was not decided.

Habits.—No more restless little birds exist, and to a casual observer they might well appear to be "here to-day, and gone to-morrow." Although to a certain extent they are the companions of the winter assemblages of Tits, Goldcrests, and Nuthatches, which are seen in the woods, they more often constitute little flocks of their own, consisting doubtless of the old birds and their progeny, which is numerous enough to enable a single family to make quite a respectable appearance as regards numbers. The note of the Long-tailed Tit is unmistakable, for besides the *zi-zi* utterance, which seems to be characteristic of all Tits, it has a kind of "churring" note peculiar to itself. Although they frequent the tops of trees in pursuit of their insect food, they are as frequently found far away from the woods, in hedgerows and scattered bushes, where the parties keep well together, and when the leader flies off to another feeding ground, the rest follow him in line, with a rapid and undulating flight. They build one of the most extraordinary and beautiful nests in the world, a domed structure of soft moss, with a hole in the side near the top, and some naturalists have stated that there is a second entrance to this remarkable structure which the little creatures build. This we have not verified from personal experience, but we have seen the two parent birds covering their numerous progeny at night, with their long tails, which seem such a weighty matter to carry in the daytime, tucked up side by side in the nest, and resting against the back of the latter. They are said to protrude sometimes from the entrance hole.

Nest.—An oval structure, large in comparison with the size of the tiny architects, beautifully soft, and made principally of moss, lined with feathers, and covered thickly with lichens, grey moss, and spiders' webs. If placed on a moss-covered bough, like that of the Chaffinch, the outside aspect of the nest might prevent its detection, but the nest of the Long-tailed Tit is generally easy to find, for, unlike the rest of its family, it does not seek the shelter of a hole in the wall or in a tree. On the contrary, the bird builds in various situations, more or less in the open, and often quite early in the year, even before the leaves have covered the trees. All kinds of places are selected, a thorn-hedge, where its discovery would seem certain, or a furze-bush or holly-tree where the nest is more concealed. Sometimes the bird builds at a great height from the ground, but as a rule the nest is low down, and within easy reach. As an instance of the warm lining which the bird provides for its nest, Gould states that he counted no less than 2000 feathers of various sorts in one which he took to pieces.

Eggs.—From six to ten or eleven in number. Ground-colour pearly- or pinkish-white, very finely sprinkled with light red dots, and having underlying dots of purple. Sometimes the eggs are spotless. Axis, 0·55–0·6 inch; diam., 0·45–0·5.

THE WHITE-HEADED LONG-TAILED TIT. ÆGITHALUS CAUDATUS.

Parus caudatus, Linn., Syst. Nat. i., p. 342 (1766).
Acredula caudata, Koch, Syst. Baier. Zool., p. 199 (1816).

Adult Male.—Rather larger than *Æ. vagans*, and distinguished by the pure white head without the black band on each side of the crown; the inner secondaries very broadly edged with white, the innermost white, with a longitudinal black streak down the shaft. Bill, feet, and iris as in *Æ. vagans*. Total length, 5·8 inches; culmen, 0·25; wing, 2·65; tail, 3·25; tarsus, 0·7.

Adult Female.—Similar to the male in colour. Total length, 6 inches; wing, 2·4.

Young.—Duller than the adults, and wanting the rose-colour, the entire back being black, and the under-parts ashy-white; on each side of the crown a dusky band.

Range in Great Britain.—Purely an accidental visitor from the Continent. More than one example has been said to have been *seen*, in company with our own British species, but such evidence is absolutely unreliable, for we can confidently assert that it is almost impossible to distinguish the two birds on a tree, as we have ourselves verified by shooting both species in winter on the Continent.

Range outside the British Isles.—An inhabitant of Northern Europe below the Arctic Circle, and ranging into Central Europe in winter. The birds of Russia and Siberia have longer tails, and specimens from high latitudes are purer in colour, but we believe that it is virtually the same species from Scandinavia to Kamtschatka, and the occurrence of the White-headed Long-tailed Tit in the northern island of Japan is of peculiar interest as showing the affinity of the Avi-fauna of this island to that of Siberia, the southern islands having a resident species, *Æ. trivirgatus.*

Habits.—These appear to be the same as those of our British bird.

Nest.—Like that of *Æ. vagans.*

Eggs.—Not to be distinguished from those of *Æ. vagans*

THE REEDLINGS. FAMILY PANURIDÆ.

This family contains but a single genus.

Panurus, Koch, Syst. Baier. Zool., p. 202 (1816).

Type, *P. biarmicus* (Linn.).

These curious little birds have been called "Bearded Tits," but it is questionable whether they are *Paridæ* at all. Some naturalists have even considered them to be an aberrant kind of Bunting. They have not the feathered nostril of the Tits, but rather an open nostril, oval, not rounded, with a covering skin or operculum, which is absent in the *Paridæ.* But the most characteristic feature of the genus *Panurus* is its plumage, which is unlike that of any Palæarctic Tit, but which closely resembles that of the Reed-birds of the Lower Himalayas and China, the genera *Paradoxornis*, *Cholornis*, &c. It is true that the long tail of the Bearded Tit somewhat recalls that of the species *Ægithalus;* it is strongly graduated, and consists of twelve feathers, the first one very short.

It may be said that there is only a single species of Bearded Reedling, though an eastern form has been called *Panurus sibiricus*, Bp. This is a pale race from Central Asia, but its light plumage is sometimes approached by specimens from other localities.

THE BEARDED REEDLING. PANURUS BIARMICUS.

Parus biarmicus, Linn., S. N., i., p. 342 (1766).
Calamophilus biarmicus, Macg., Br. B., iii., p. 694 (1840); Dresser, B. Eur., iii., p. 49, pl. 102 (1871).
Panurus biarmicus, Newt. ed. Yarrell, i., p. 511 (1874); B. O. U. List. Br. B., p. 24 (1883); Gadow, Cat. B. Brit. Mus., viii., p. 77 (1883); Seeb., Br. B., i., p. 492 (1883); Saunders, Man., p. 91 (1889); Lilford, Col. Fig. Br. B., pt. xxiv (1893).

Adult Male.—General colour above cinnamon-rufous, the upper tail-coverts vinous; the tail pale vinous chestnut, the three outer feathers white at the ends for a considerable distance, and blackish towards the bases; scapulars externally hoary-whitish; wings cinnamon-rufous, the median coverts black, the inner greater coverts and inner secondaries black in the centre, the inner webs of the latter white, forming a broad band on either side of the back; the edge of the wing and the outer aspect of the primaries, white; head and sides of face pearly-grey, the forehead hoary; lores and feathers in front of the eye black, continued down the cheeks into a kind of moustache; throat and breast greyish-white with a rosy tinge; the thighs and abdomen sandy-buff; sides of breast rosy, extending on to the sides of the neck; sides of body and flanks cinnamon; under tail-coverts black; under wing-coverts white, as also the quill-lining, with a sandy tinge, especially on the latter; bill yellow; feet black; iris pale yellow. Total length, 6·7 inches; culmen, 0·4; wing, 2·4; tail, 3·3; tarsus, 0·8.

Adult Female.—Not so brightly coloured as the male; and not nearly so suffused with rosy pink underneath; the head is brown like the back; the lores and moustache are ashy-white, and there is none of the black which distinguishes the male; the under tail-coverts are cinnamon-buff, like the flanks. Total length, 5·8 inches; wing, 2·35.

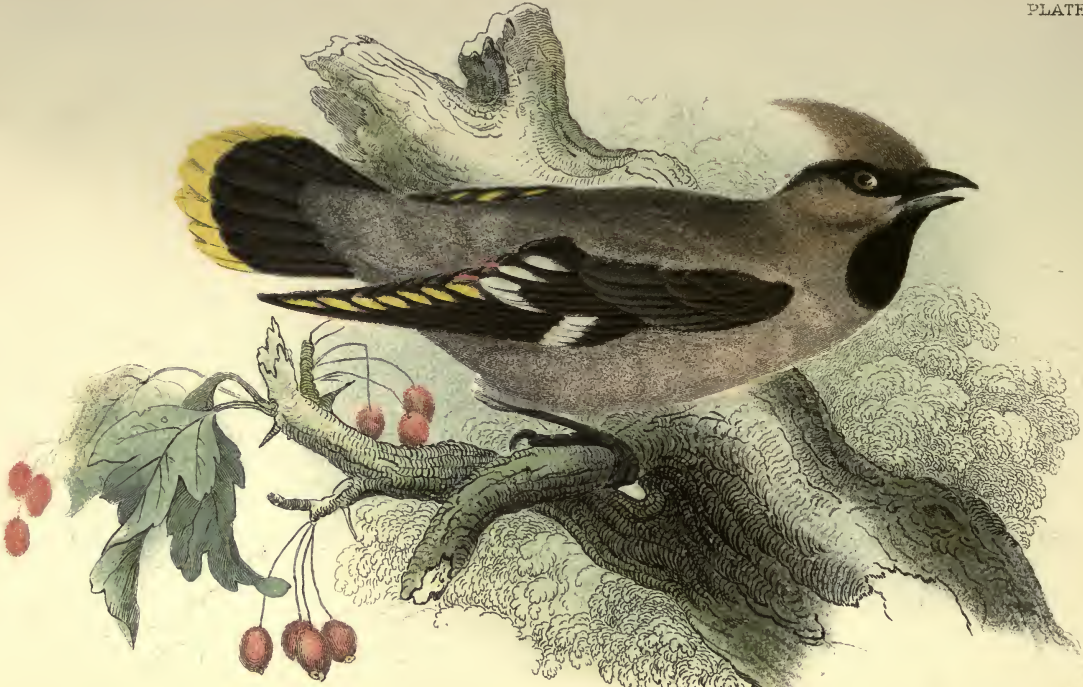
Young.—Resemble the female in not having any black moustache, but they differ in being more tawny buff, with the middle of the back black, and a black stripe on either side of the crown. Even after the first moult, young birds retain a good deal of black striping on the head and back, and even full-plumaged adult males, with grey head and black moustache, sometimes show some traces of black on the back.

Range in Great Britain.—Said to be found at the present time only in two counties of England, viz., Devonshire and Norfolk. The destruction of many of its reedy haunts by the drainage of the fens has doubtless been the prime cause of the decreasing numbers of this species, which used to breed in Sussex, Kent, Essex, and the fen-lands of Cambridgeshire, Huntingdonshire, and Lincolnshire. On the Broads of Norfolk (and possibly of Suffolk), the Bearded Reedling still occurs, but in diminishing numbers.

Range outside the British Islands.—Extends, in suitable localities, from France and Spain, eastwards as far as North-eastern Thibet, frequenting marshes and swamps, and, as mentioned above, becoming gradually paler towards the eastern portions of its range. It does not extend north of Pomerania in Europe, nor does it cross the Mediterranean. To its Dutch and German habitats it is a summer visitor, differing in this respect from our British bird, which is resident, and does not seem to migrate at all.

Habits.—It is now very difficult to observe the habits of the Bearded Reedling in this country, as it is only in certain favoured localities in Norfolk, where the bird is protected, that there is any likelihood of meeting with it in a state of nature. It is now almost equally rare in many parts of Holland, in which, not long ago, it could have been seen in numbers. The primary cause of the disappearance of the species is the same in both instances, viz., the draining and reclaiming of the fens and meres; but it must also sadly be confessed that in England the unrestrained zeal of the collector and private

PLATE XIX.



WAXWING.

dealer in birds and eggs has largely contributed to the threatened extermination of the species.

The Bearded Reedling is never found away from marshes or reedy localities, but even in its natural haunts it is not easily observed, as it often skulks away into the undergrowth of smaller reeds and sedges when approached. In summer its food consists of insects and tiny mollusca, but in winter it feeds upon the seeds of the reeds, a mode of sustenance unlike that of Tits, with which family this species has been associated by most writers. Mr. Seebohm states that the long tail of the bird is somewhat in the way in windy weather, and it then keeps entirely to the shelter of the reeds. The call-note, he says, "appears to be a musical *ping ping*, something like the twang of a banjo; the alarm-note is said to be a *chir-r-r*, something like the scold of a Whitethroat; and the cry of distress is a plaintive *ee-ar*, *ee-ar*."

Mr. Howard Saunders observes that even in the winter the birds are lively and musical, and at that season they may be seen in flocks of from forty to fifty together, often roving from the frozen inland waters to those which are kept open owing to the influence of the tide.

Nest.—Placed in a bunch of reeds not far from the ground. It is somewhat deep, and composed of flat grass, and is lined with fine grass and the down or flowers of the reeds themselves.

Eggs.—From four to seven in number, china-white in ground-colour, and varying much in size. They are rather large for the size of the bird, and are faintly dotted and streaked with dark brown, the streaks and lines somewhat resembling those on the eggs of a Bunting. There is no attempt at a cluster of spots round the large end. Axis, 0·6–0·7 inch; diam., 0·55–0·6.

THE GOLD-CRESTS. FAMILY REGULIDÆ.

The little birds which constitute this family have been considered by some ornithologists to be akin to the Warblers, by others to the Tits. To us they seem to be an isolated family, not distantly related to the Tits, but not to be included within the confines of the family *Paridæ*, nor to be admitted into the *Sylviidæ*. The diminutive size, the brilliant crest, the fluffy plumage, and the peculiar nests which the Gold-Crests make, are all characteristic of the family *Regulidæ*, the members of which have also a most peculiar nostril. This is oval, situated at the base of the bill, and has a slight operculum, the whole being covered with a little stiff plume, this last character being peculiar to the Gold-Crests.

THE GOLD-CRESTS. GENUS REGULUS.

Regulus, Koch, Syst. Baier. Zool., p. 199 (1816).

Type, *R. regulus* (Linn.).

The genus *Regulus* is the sole representative of the family. It contains about six species, which are found in the northern and temperate parts of the Old and New World, extending as far south as Mexico in the latter. In the Old World the genus *Regulus* is principally Palæarctic, as it is found almost throughout the entire extent of this region, and occurs also in the Himalayas, where a species indistinguishable from the English bird is met with. The Common Gold-Crest of our islands represents one section of the genus *Regulus*, while the Fire-Crest represents another section, distinguished by the golden patch on the side of the neck. In Madeira a separate form of Fire-Crest, *R. maderensis*, is found, and in the Canaries another form, *R. teneriffæ;* while in the Azores occurs the long-billed *Regulus azorensis*, the last-named being an outlying representative of the Gold-Crest.

THE GOLD-CREST. REGULUS REGULUS.

(*Plate XVII., Fig.* 1.)

Motacilla regulus, Linn., S. N., i., p. 338 (1766).

Regulus auricapillus, Macg., Br. B., ii., p. 408 (1839).

Regulus cristatus, Newt. ed. Yarr., i., p. 449 (1873); Dresser, B. Eur., ii., p. 453, pls. 71 and 72, fig. 2 (1874); B. O. U. List. Br. B., p. 14 (1883); Gadow, Cat. B. Brit. Mus., viii., p. 80 (1883); Seeb., Br. B., i., p. 453 (1883); Lilford, Col. Fig. Br. B., pt. iv. (1887); Saunders, Man., p. 55 (1889).

Adult Male.—General colour above green, inclining to lighter and more yellowish-green on the lower back, rump, and upper tail-coverts, all of which parts are mottled with ashy-whitish spots, more or less concealed; lesser wing-coverts like the back; median and greater coverts dusky, externally edged with green and tipped with yellow or yellowish-white, forming a double wing-bar; quills blackish, edged with yellow, turning to white near the base of the primaries; the base of the secondaries yellow, followed by a band of black, forming a conspicuous pattern; the inner secondaries tipped with white; tail-feathers ashy-brown with greenish-yellow margins; on the crown a beautiful patch of brilliant orange, flanked on both sides by a band of black feathers, streaked with yellow; fore-part of coronal patch also bright yellow; forehead dingy olive; lores ashy-white; eyebrow and sides of face dingy olive; cheeks and throat isabelline-buff, the chin whitish; breast and centre of body ashy-white, tinged with yellow, the flanks and sides of body greenish-olive; under wing- and tail-coverts white with yellowish tips; quilts ashy below, edged with whitish; bill nearly black; feet brown; iris hazel. Total length, 3·7 inches; culmen, 0·4; wing, 2·15; tail, 1·5; tarsus, 0·65.

Adult Female.—Similar to the male, but rather duller and greener in colour, and at once distinguished by the colour of the crest, which is bright yellow, instead of orange, with a very broad streak of black on either side of the crest.

Young.—Coloured like the adults, but are much duller, and entirely lack the bright crown, this part of the head being dull green like the rest of the upper-parts; under surface of body ashy-white.

Range in Great Britain.—Almost universal throughout the three kingdoms, and breeding wherever it is found, except in the Outer Hebrides, the Orkneys, and Shetland Isles. The numbers of our indigenous birds are vastly increased by the arrival on our eastern coasts of numbers of Gold-Crests from the Continent. Mr. Howard Saunders has thus summarised some of the facts of the migration of this species: "In autumn immense flocks sometimes arrive on our east coast, extending quite across England, and the Irish Channel, and into Ireland. In 1882 the migration-wave of this description commencing on August the 6th, and lasting for ninety-two days, reached from the Channel to the Faroes; in 1883 the migration lasted eighty-two days; and again, in 1884, for a period of eighty-seven days. Similar 'waves' passed over Heligoland, with the exception of the last year, when, strange to say, the numbers were below the average. An unusual spring 'rush' took place in 1882. On such occasions bushes in gardens on the coast are covered with birds as with a swarm of bees; crowds flutter round the lanterns of lighthouses; and the rigging of fishing-smacks in the North Sea is thronged with weary travellers. In April a return migration occurs."

Range outside the British Islands.—Generally distributed throughout Europe, in most parts being resident, but in the north it is a migratory species. It is found as far as the Arctic Circle in Scandinavia, in North Russia to 63° N. lat., and eastwards up to 60°. It appears to vary slightly towards the Pacific, and in the Japanese islands the Gold-Crest has a greyish nape. This Japanese form is approached in character by the Himalayan Gold-Crest, and at the present time *Regulus regulus* is recognised as the dominant form of the Palæarctic region, with certain variations in its eastward habitat, which are not considered worthy of specific recognition. Thus Mr. Oates states that the Himalayan Gold-Crest cannot be separated from the European bird, and Mr. Seebohm will not allow that the Japanese race is specifically distinct.

Habits.—In speaking of the Tits, the Creepers, and the Nuthatches, we have referred to the sociable companionship which induces these birds to unite together in family parties during the winter. There is still one other companion of these winter gatherings, the little Gold-Crest, the smallest of European birds, and consequently the smallest of our British species. It is, however, a very active and vigorous little bird, quite as sprightly as the Tits with which it consorts, and remarkable for its loud call-note, which is singularly piercing for such a small creature to utter. Its song is decidedly superior to that of the Tits, and is more Warbler-like, though somewhat weak. The Gold-Crest may be found in almost any situation, in pursuit of the tiny insects which constitute almost its sole sustenance, and in winter it is found in the open woods, flying in company with its friends the Tits and Creepers, and foraging through the bushes and undergrowth as well as the oaks above. At all times, however, it shows a preference for yew-trees or firs, either for their nesting association or for particular insects which it finds in those trees. Yew-avenues, therefore, and fir-woods are sure to be tenanted by plenty of Gold-Crests, whose note quickly leads to their detection, and the birds may be seen hanging on to slender twigs or climbing about the branches like little Mice, the males now and then stopping to emit a musical little song.

Nest.—This is a beautiful structure of green moss, usually suspended, like a hammock, under a branch of a pine- or yew-tree, and very well concealed; but, according to Mr. Howard Saunders, it has occasionally been found on the upper surface of a branch, and even in a low bush. Besides the green moss, of which the nest is generally composed, other materials, such as spiders' webs and hair, are interwoven in the nest, and the latter is also interlaced with the foliage of the branch on which it is hung, while the inside is softly lined with feathers.

Eggs.—From five to eight in number. Ground-colour dark isabelline, or creamy-white, with a darker ring round the larger end. In the isabelline-coloured eggs this darker portion appears uniform, the spots being so thickly clustered together as to produce this effect. In the whiter eggs the large end is distinctly spotted with reddish-brown, forming an irregular zone, in which appear dark underlying markings. Axis, 0·5–0·55 inch; diam., 0·4–0·45. (Plate XXX., Fig. 2.)

THE FIRE-CREST. REGULUS IGNICAPILLUS.

(*Plate XVII., Fig.* 2.)

Sylvia ignicapilla, Brehm, in Temm. Man. d'Orn., p. 231 (1820).

Regulus ignicapillus, Macg., Br. B., ii., p. 416 (1839); Newt. ed Yarr., i., p. 456 (1873); Dresser, B. Eur., ii., p. 459, pl. 72 (1874); Seeb., Br. B., i., p. 458 (1883); B. O. U. List Br. B., p. 15 (1883); Gadow, Cat. B. Brit. Mus., viii., p. 83 (1883); Lilford, Col. Fig. Br. B., pt. v. (1887); Saunders, Man., p. 57 (1889).

Adult Male.—Bright yellowish-green above; the wings and tail as in *R. regulus*, the wing-bars being very distinct; crown golden-orange, with a buff forehead and a broad band of black along each side of the crown; feathers through the eye blackish, with a conspicuous streak of white between it and the black band of the crown, running parallel to the latter streak; ear-coverts bluish-grey on the upper margin, the rest of the sides of the face isabelline-buff like the throat and sides of body, the breast and centre of body ashy-whitish; on each side of the neck a patch of golden-yellow; bill and feet dark brown; iris hazel. Total length, 4 inches; culmen, 0·4; wing, 2·2; tail 1·55; tarsus, 0·6.

Adult Female.—As with the Gold-Crest, the hen bird of the Fire-Crest differs from her mate by the less brilliant crown.

Note.—The Fire-Crest, as its name implies, has a more brilliantly-coloured crown than the Gold-Crest, and is easily distinguished by the golden-yellow patch on the side of the neck, and by the white eyebrow, which is very well marked in *R. ignicapillus.*

Range in Great Britain.—A winter visitant, probably of more frequent occurrence than is generally supposed. Its capture has been recorded in nearly all the eastern and southern counties of England, but its occurrence in Scotland and Ireland has not yet been established. The Fire-Crest is quite as migratory as the Gold-Crest, and in Heligoland in 1876 there were even more killed of the former than of the latter during our visit, but it is certain that the Gold-Crest comes to England on migration in much larger numbers than its ally.

Range outside the British Islands.—The Fire-Crest is a bird of much more restricted range than the Gold-Crest, and, although found in Western, as well as in Central and Southern Europe, it does not extend to Scandinavia, nor does it occur north-east of the Baltic Provinces, though it is found in Southern Russia and Asia Minor also.

Habits.—These are stated to be similar to those of the Gold Crest, though many writers consider it a more restless bird, and in its ways it has been compared to a Willow-Warbler. Mr. Seebohm says that it affects the pine-trees more pertinaciously than the Gold-Crest, and does not descend so much to the undergrowth. Its food consists, like that of the Gold-Crest, almost entirely of insects.

Nest.—Like that of the last-named bird, and similarly slung, under a bough.

Eggs.—Form five to ten, sometimes even exceeding the latter number. They are distinguished from those of the Gold-Crest by their reddish tinge, which almost amounts to pale chocòlate. Most clutches show a faint ring round the larger end of the egg, where the reddish dots are clustered together, but in many specimens the whole of the egg is dusted with tiny dots. Axis, 0·55 inch; diam., 0·4.

THE RUBY-CREST. REGULUS CALENDULA.

An example of this American species is in the British Museum, by which institution it was acquired with the rest of the Gould collection after Mr. John Gould's death. It is said to have been shot by the late Mr. Dewar, near Loch Lomond, in 1852, but the history of this specimen seems scarcely authenticated.

THE SHRIKES. FAMILY LANIIDÆ.

The "Butcher"-birds, as they are sometimes called, from the way in which some of them impale small animals, insects, &c., on thorns, are a somewhat large assemblage of insectivorous birds, which have generally a hooked bill with a notch near the end of the upper mandible. This resemblance to the bill of a Hawk caused many of the older naturalists to class the family near the *Accipitres*, or Birds of Prey. The likeness is, however, merely superficial, and a study of the other characters proves that the Shrikes are thoroughly Passerine birds. Osteologically considered, the skull of a Shrike has certain features which distinguish it from the majority of the *Passeres*, and the principal character is the spiny process which forms the prolongation of the inner posterior angle of the palatine-bones. Another characteristic of the Shrikes is the *barred* plumage of the nestlings, which in the bulk of the Passerine birds are uniform in colour, or else spotted or streaked. The Shrikes are a very numerous family, and in some form or another are spread over nearly the whole extent of the globe. The genus *Lanius*, however, embraces the northern forms of the family, with which alone the present work is concerned.

THE TRUE SHRIKES. GENUS LANIUS.

Lanius, Linn., Syst. Nat., i., p. 134 (1766).

Type, *L. excubitor*, Linn.

The characters enumerated above are those which distinguish the True Shrikes, as far as the European species have to be considered. There are about fifty species of *Lanius*, and these are found over the greater part of Europe and Asia, Africa, North America, and the northern parts of Central America. The Grey Shrikes constitute a well-marked section of the genus, and the parti-coloured Shrikes another section. In this work are enumerated five British species, three belonging to the grey section of the genus, and two to the parti-coloured section.

THE LESSER GREY SHRIKE. LANIUS MINOR.

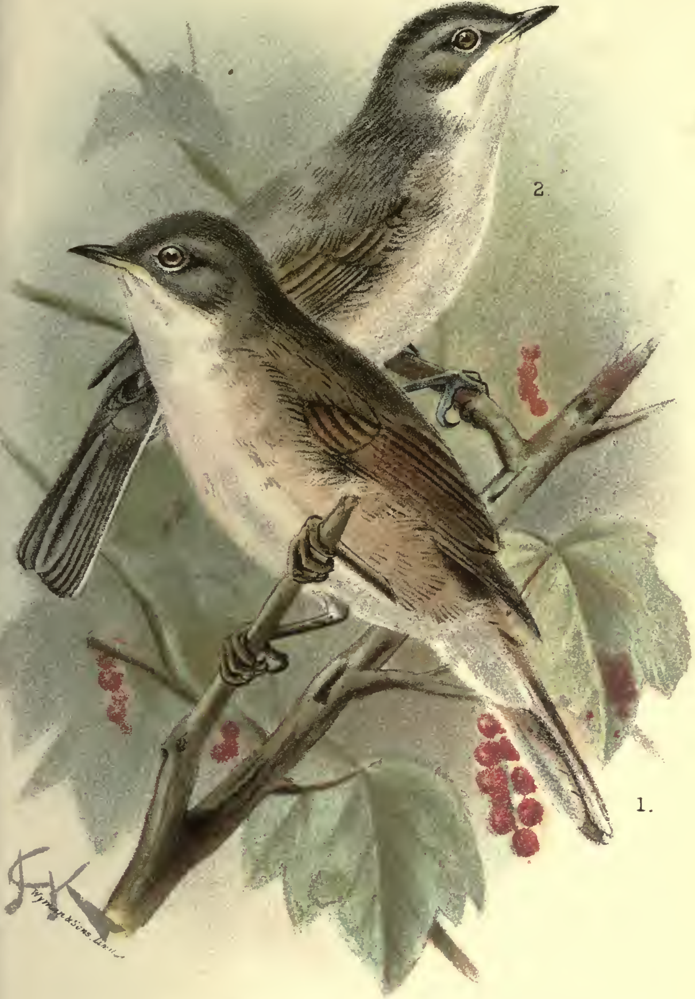
Lanius minor, Gm., S. N., i., p. 308 (1788); Newt. ed. Yarr., i., p. 205 (1872); Dresser, B. Eur., iii., p. 393, pl. 149 (1872); Seeb., Br. B., i., p. 603 (1883); B. O. U. List Br. B., p. 38 (1883); Gadow, Cat. B. Brit. Mus., viii., p. 235 (1883); Saunders, Man., p. 141 (1889); Lilford, Col. Fig. Br. B., pt. xv. (1890).

Adult Male.—General colour above clear blue-grey or slaty-blue, the scapulars like the back; wings black, the lesser wing-coverts ashy-grey, with a large patch of white at the base of the primaries, forming a big speculum; tail-feathers black, the four centre ones not tipped with white, the next pair on each side white at the base and having a white spot at the tip, the two outer tail-feathers entirely white with a blackish shaft-streak; head slaty-blue like the back; a broad frontal band, feathers round the eye and the ear-coverts, black; cheeks and throat white, as well as the abdomen and under tail-coverts; the breast and sides of the body delicate rosy pink; under wing-coverts and axillaries whitish, ashy on their inner webs; the quill-lining white, with a dusky patch near the edge of the wing, formed by the dark lower primary coverts; bill and feet black; iris brown. Total length, 8·5 inches; wing, 4·6; culmen, 0·65; tail, 3·2; tarsus, 1·0.

Adult Female.—Scarcely to be distinguished from the male, but having the frontal band less broad and pronounced. Total length, 8·5 inches; wing, 4·7.

Young.—Differs from the adults in being browner, the upper surface being brownish-grey, freckled with a few cross-lines of blackish or dusky-brown on the head and back; the lores and

PLATE XX.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1. WHITETHROAT. 2. LESSER WHITETHROAT.

ear-coverts dusky-blackish; their penultimate tail-feather with a good deal of black on the inner web, the outermost one being entirely white, as in the adults.

NOTE.—In addition to the black forehead of the adult, this species may always be recognised, at any age, by the very short first primary, which is less than one-third of the second primary. In adult birds, too, there is always a beautiful rosy blush on the breast.

Range in Great Britain.—A rare visitor in autumn and spring, having been captured four times, viz.: in November, 1851, in the Scilly Isles; near Great Yarmouth in the spring of 1869, and again in the spring of 1875; and in September, 1876, near Plymouth.

Range outside the British Islands.—A summer visitor to most parts of Europe, but not reaching Scandinavia regularly, though it is occasionally found in Holland, Belgium, Denmark, and South Sweden. Eastwards it is found as far as Persia, Turkestan, and South-western Siberia. It winters in Africa, extending down the Nile Valley, and doubtless passing through the Lake Regions till it comes to the Lower Congo, Damara Land, and the Transvaal.

Habits.—Mr. Seebohm writes: In both Greece and Asia Minor I occasionally met with this bird; but it was nowhere so common as either the Woodchat or the Red-backed Shrike; nor did it, like the latter bird, ascend into the pine-regions. It seemed also to be very rare in the forests of olives which fill many of the plains. The ground it preferred was the outskirts of cultivation, where trees and bushes of various kinds—small oaks, hollies, oleanders, pomegranates, white and pink roses, and abundance of clematis—struggle for existence amongst the broken rocks. Here and there a little patch is cultivated with wheat, tobacco, or Indian corn, with a tree or two in the middle (olive, almond, or walnut); and abundance of cleared places grown over with rank vegetation attest the former presence of a dying-out civilisation. In these places the Lesser Grey Shrike was to be seen, occasionally perched conspicuously on the top of a bush. It also frequented the gardens near the villages, and is said to regale itself on the cherries, figs, and mulberries which grow in the hedges that divide them from each other. Its principal food is undoubtedly beetles (which swarm to a incredible extent in these climates), butterflies, grasshoppers, and other insects. The flight of this Shrike, like that of its congeners, is undulatory, but easy and comparatively noiseless; and it skims through the air like a Partridge for a moment or two before it alights on some perch, on to which it drops with a scuffle of the wings. The song of the Lesser Grey Shrike is a not unmusical chatter, something like the twitter of the Swallow or Starling, but louder and mixed with some harsher notes. It has a variety of notes, some very harsh, which are probably alarm notes, and others somewhat plaintive, which may be call-notes. This bird is said occasionally to impale insects on thorns, as most of its congeners are in the habit of doing."

Nest.—Like that of other Shrikes, composed of moss with twigs and rootlets, and lined with wool, hair and a few feathers. Mr. Seebohm describes one taken by himself in Greece as follows: "With the exception of a twig or two, a piece of flag-like rush, and a little wool at the foundation, the whole nest is composed of a downy-leaved cudweed (*Gnaphalium dioicum*), some in flower and some in seed, and most of them pulled up by the root."

Eggs.—From four to seven in number. The ground-colour varies from greenish-white to pale greenish-blue. In both these types of egg the markings are much the same, being brown or greenish-brown, with the underlying markings of light purplish-grey very distinctly indicated. In nearly every case the markings cluster more thickly round the larger end of the egg, but sometimes the whole of the egg is spotted. Axis, 0·9–1·0 inch; diam., 0·7–0·75.

THE GREAT GREY SHRIKE. LANIUS EXCUBITOR.

Lanius excubitor, Linn., S. N., i., p. 135 (1766); Macg., Br. B., iii., p. 492 (1840); Dresser, B. Eur., iii., p. 375, pl. 145 (1871); Newt. ed. Yarr., i., p. 199 (1872); Seebohm, Br. B., i., p. 598 (1883); B. O. U. List Br. B., p. 37 (1883); Gadow, Cat. B. Brit. Mus., viii., p. 237 (1883); Lilford, Col. Fig. Br. B., pt. viii. (1888); Saunders, Man., p. 139 (1889).

Adult Male.—General colour above blue-grey or French-grey;

the scapulars externally white, and the lower rump and upper tail-coverts somewhat lighter grey, the sides of the rump pure white; wings black, with *two white wing-patches*, one formed by the white bases to the primaries, and the second by the white bases of the outer secondaries; all the latter tipped with white and having a considerable amount of white near the base of the inner web, some of the inner primaries having a small white spot at the ends, and the outer primaries narrowly fringed with whitish; tail-feathers black, tipped with white, this white tip obsolete on the centre feathers, but gradually increasing in extent towards the outermost, which is also white along the outer web; crown of head like the back, and the sides of the neck also grey; the base of the forehead somewhat whiter, and a slight streak of white over the eye; lores, eyelid, and ear-coverts, black; cheeks and under surface of body, white, with a faint grey shade on the breast and sides of body; under wing-coverts and quill-lining white; bill black, the base of the under mandible lighter; feet and claws brownish-black; iris dark brown. Total length, 9 inches; culmen, 0·9; wing, 4·4; tail, 4·35; tarsus, 1·05.

Adult Female.—Similar to the male, but with the white patches on the wing a trifle smaller. Total length, 8·5 inches; wing, 4·5.

Young.—Differs from the adult in having the scapulars grey like the back, the whole of the upper surface being washed with brown; wings as in the adult, but the wing-coverts tipped with brown; lores and ear-coverts brownish-black; under surface of body ashy-whitish, the breast suffused with brown, with darker brown margins to the feathers.

Range in Great Britain.—A winter visitor, having occurred in all three kingdoms, and being regularly met with in England every cold season.

Range outside the British Islands.—A resident species in most countries of Europe below the Baltic, but a summer visitor only to Scandinavia and North Russia, ranging in the former country up to lat. 70° N. Its eastern range, according to Mr. Seebohm, extends to the Ural Mountains and the River Volga, where it interbreeds with Pallas's Grey Shrike, *L. sibiricus*. in the former locality, and with the white-winged Grey Shrike, *L. leucopterus*, on the Volga. Professor Collett has also recorded the hybridising of *L. excubitor* and *L. sibiricus* in Norway.

Habits.—As the Great Grey Shrike only visits England in the winter, there is no opportunity of observing its nesting habits in this country, and although a belief exists that in Willoughby's time, towards the end of the seventeenth century, a Butcher-bird, which may have been the present species, was to be found in the mountainous parts of England, as for instance, in the Peak of Derbyshire, there has never been any authentic record of the breeding of the species in Great Britain. In the parts of Europe where the Great Grey Shrike nests, it is a very conspicuous object, generally selecting a perch in the open, from whence it can keep a good look out and perceive danger from a distance. So wary is it that in Germany it is called the "Sentinel," and at Valkensvaard, in Holland, the bird's prodigious power of sight is made use of by the falconers when they are trapping Hawks on passage. Long before the eye of a man can detect the approach of a Falcon, the latter is detected by the Shrike, but it is even then some little time before the appearance of a speck on the far horizon shows the accuracy of the Shrike's vision, and enables the fowler to be ready with his nets and his lure for the approaching bird. In many respects the Shrike resembles a bird of prey, and it is even said to hover in the air like a Kestrel, or to fly down a small bird, like a Merlin. It has its so-called "larder," like other Butcher-birds, and Mr. Seebohm says that it has probably a dozen "larders" in various parts of the district haunted by it. He writes: "Like many birds of prey, he has his favourite feeding place, some convenient spot in a hedgerow, probably chosen because the footing is good, and the thorns sharp; and to this place he brings his prey during the day, and there an accumulation of the remains of his meals are discovered. I remember finding one of these so-called 'larders' in a hedge on a roadside a few miles from Valkensvaard, close to a gate. The thorns were very long and sharp, and there were the dried-up remains of half-a-dozen mice which had evidently been eaten except the feet, tail, and part of the skin, Like many of the birds of prey, the Great Grey Shrike throws up pellets, and, according to Nauman, remains of beetles and grasshoppers, frogs, lizards, and blind-worms are found among its castings in summer time, but in winter only bones of mice and feathers of birds are found in the Shrike's pellets."

Nest.—Composed of twigs, grass, and moss, with a lining of roots, wool, and hair. It is a somewhat clumsily built structure.

Eggs.—From five to seven in number. The ground-colour is either pale greenish-white or brownish-white, the latter being the more usual type of the two. A few have the ground-colour white, without any greenish tinge. The spots are rather heavy and of an olive-brown or greenish-brown tint, sometimes distributed over the egg, but in other instances clustering round the larger end, and occasionally clouding the whole of the egg. Axis, 1·0–1·1 inch; diam., 0·75–0·8.

PALLAS'S GREAT GREY SHRIKE. LANIUS SIBIRICUS.

Lanius major ("nec. Wilkes," *teste* Stejneger), Pallas, Zoogr. Ross. Asiat., i., p. 402 (1811); Gadow, Cat. B. Brit. Mus., viii, p. 239 (1883); Seebohm, Brit. B., i., p. 595 (1883); Saunders, Man., p. 139 (1889).

Lanius sibiricus, Bogd.; Stejneger, Proc. U. S. Nat. Mus., xvi., p. 217.

(*Plate XVIII.*)

Adult Male.—Similar to *L. excubitor*, but having only one white wing-patch, formed by the white base of the primary-quills, the secondaries entirely black at the base and not showing any trace of the second white patch so conspicuous in true *L. excubitor;* there seems to be also less white on the inner webs of the inner secondaries underneath, and the lower primary coverts are also somewhat more pronounced ashy-brown; bill, feet, and iris, coloured as in *L. excubitor.* Total length, 9·5 inches; culmen, 0·75; wing, 4·5; tail, 4·4; tarsus, 1·05.

Adult Female.—Similar to the male in colour.

Young.—Similar to the adults, but having a brown shade over the grey of the upper parts, and slightly obscuring the white scapulars; the under surface regularly barred with fine crescentic markings on the feathers, excepting on the throat, abdomen, and under tail-coverts, which are all pure white.

Range in Great Britain.—Like the foregoing species, it is an autumn and winter visitant, and appears to be quite as common as *Lanius excubitor* in some years.

Range outside the British Islands.—Extends from Eastern Siberia south of lat. 65° N., as far west as Northern Russia. In many of its western habitats it is said to interbreed with *L. excubitor.* Much has been written about the distribution of this species, and the various allied forms. Mr. Dresser has contributed a long article to the "Ibis" for 1892 (pp. 374-380), which does not seem to lay down any definite conclusions. Much more to the purpose are the remarks of Mr. Stejneger (*l.c.*), who, as usual, puts forward some tangible results of his work. Two propositions are set before us, either to consider that there is but one species of Great Grey Shrike, ranging over the whole of the Palæarctic and Nearctic Regions, including *L. excubitor, L. sibiricus* (*L. major*, auct.), and even *L. borealis* of North America—or to recognise three forms, *L. excubitor* from Central and Southern Europe, *L. sibiricus*, which ranges from the Japanese Sea all through Northern Siberia and Northern Russia to Norwegian Finmark, and *L. borealis*, confined strictly to North America. This latter conclusion, which commends itself also to Dr. Stejneger, seems to be the most scientific explanation of the distribution of the three races of Grey Shrike under consideration. It is the present race which is figured in the plate (XVIII).

Habits.—These appear to be similar to those of *L. excubitor.*

Nest.—Not yet described, but doubtless similar to that of the foregoing species.

Eggs.—Of these nothing has as yet been recorded, but they will doubtless be found to resemble those of *L. excubitor*

THE RED-BACKED SHRIKE. LANIUS COLLURIO.

Lanius collurio, Linn., S. N., i., p. 136 (1766); Macg., Br. B., iii., p. 505 (1840); Dresser, B. Eur., iii., p. 399, pl. 150 (1871); Newt. ed. Yarr., i., p. 209 (1872); B. O. U. List Br. B., p. 38 (1883); Seeb., Br. B., i., p. 606 (1883); Gadow, Cat. B. Brit. Mus., viii., p. 286 (1883); Lilford, Col. Fig. Br. B., pt. v. (1887); Saunders, Man., p. 143 (1889).

Adult Male.—General colour above vinous chestnut; the rump grey; the upper tail-coverts reddish-brown, greyer at the tips; wing-coverts like the back; primary-coverts and quills dusky brown, edged with rufous, more broadly on the inner secondaries; tail-feathers blackish, with a narrow white tip, all but the centre feathers white for more than the basal half, the outer feather edged with white externally, the shafts of all blackish; head and hind neck delicate blue-grey, becoming lighter towards the forehead, which has a black line at the base, joined to the lores and ear-coverts, which are also black; above this black line is a narrow line of whitish, extending above the ear-coverts; cheeks and under surface of body vinous pink, becoming whiter on the lower abdomen and under tail-coverts; under wing coverts and axillaries whitish; bill and feet black; iris, dark hazel. Total length, 7 inches; culmen, 0·65; wing, 3·6; tail, 3·0; tarsus 0·9.

Adult Female.—Differs considerably from the male. Reddish-brown above, instead of chestnut, and having the rufous colour on the wings of the same tint; the grey of the head duller, and washed with brown; lores and eyebrows buffy-white, and the ear-coverts rufous, instead of black; tail-feathers brown, with only a little whitish-red near the base of the outer ones, which are narrowly tipped with white, the outermost white along the outer web; throat and abdomen white; the cheeks, fore-neck, and breast, as well as the sides of the body, yellowish-buff, with crescentic bars of brown. Total length, 7 inches; wing, 3·65.

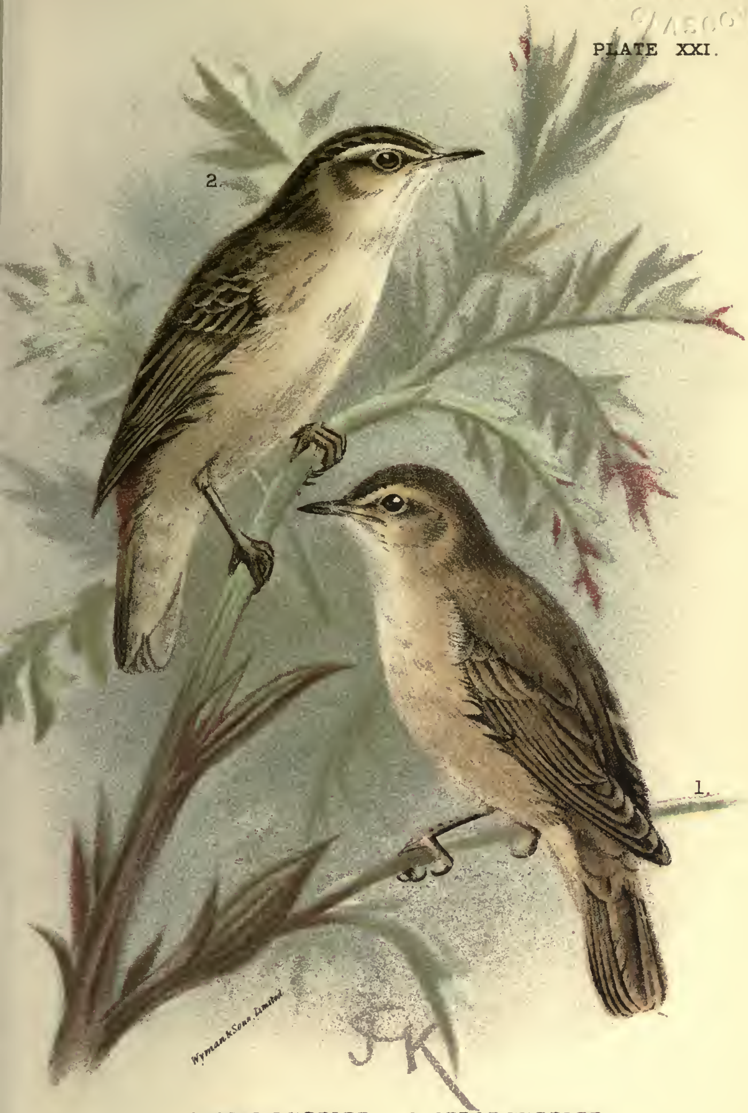
Young.—Like the old female, but more chestnut, and with blackish-brown ear-coverts; the under surface of the body as in the adult hen bird, but the upper surface also mottled with pale tips and crescentic bars of black on all the feathers.

Range in Great Britain.—A summer visitor, occurring over the greater part of England and Wales, but of irregular occurrence in the northern counties and in Eastern Scotland. The records of its having bred in the latter kingdom are apparently not authentic. The late Dr. Saxby records his having seen in Shetland a female bird, with three young birds able to fly well, on the 9th of June, 1870. This has been commented upon by the author of the excellent "Manual of British Birds" as being extraordinary, if a fact, "seeing that even in the south of England eggs are hardly laid by the middle of May, and require a fortnight's incubation." Mr. O. V. Aplin, however, who has written a careful account of the distribution of the Red-backed Shrike in Great Britain, suggests that Saxby was too careful an observer to have made a mistake, and that the month of "July" was probably intended. A misprint of this kind is very possible, as Saxby's work was published after his death. In Ireland only one instance of the bird's occurrence has been noted, near Belfast, in August, 1878.

Mr. Aplin sums up its distribution in England as follows: "One may almost say that lat. 53° marks off the country south of which the Red-backed Shrike is a common summer migrant; but a boundary-line drawn here would have, of course, to be deflected in places. Turning to the south-west we find the species rare in Pembrokeshire, Cornwall, and South-west Devon. Possibly 45° W. long. might be laid down as a western boundary, beyond which the bird ceases to be a regular and common visitor, but as in the case of its northern confines no very strictly defined marches can be prescribed."

Range outside the British Islands.—Generally distributed throughout Europe, as far as 64° N. lat., but is very rare as a breeding bird in the countries of the Mediterranean, being found only in the mountainous parts of Greece, Asia Minor, and Palestine, and thence through Northern Persia to Central Asia, as far as the Altai Mountains. The principal winter home of the species appears to be Southern Africa, and it doubtless migrates by way of the Nile Valley and East Africa to its winter quarters. It has even been said to breed during its absence from Europe, but we think that there is some mistake with regard to this assertion. Mr. F. J. Jackson, however, noticed this species

PLATE XXI.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1. REED WARBLER. 2. SEDGE WARBLER.

on the plains of Eastern Africa sitting about on the thorny bushes, and behaving much as the species does in England, and he considered that it was likely they were about to nest, as they were in beautiful spring plumage. As is well known, however, many of our migratory species gain their most brilliant plumage before they leave their winter quarters, and come to Europe only after their breeding-dress is perfectly donned; and up to the present there is no evidence of the nesting of the Red backed Shrike in any part of Africa. Another winter home of the species is the Persian Gulf, where it has been found by Mr. W. D. Cumming, and it also visits India, in the extreme north-west of which country it has been found in the cold season.

Habits.—There is much that reminds us of a Flycatcher in the way in which the present species captures its food, for it has undoubtedly favourite perches, on which it sits, and to which it returns after the capture of an insect. It is frequently to be seen on telegraph-wires, whence it keeps a sharp look-out in every direction, and a favourite resort is a field of freshly-cut grass. It also captures a good many mice and small birds, not pursuing them in the open like birds of prey, but dropping down on them suddenly. In the British Museum is a very good specimen of the larder of a Red-backed Shrike, taken with the nest of the bird by Lord Walsingham in Norfolk, and showing the way in which the Shrike spits insects and birds on thorns, and the species has been known, according to Captain Clark-Kennedy, to hang up birds even bigger than itself, such as Blackbirds and Thrushes, as well as Tits of several kinds, Robins and Hedge-Sparrows, while it will also occasionally seize young Partridges and Pheasants. Wherever the bird occurs it is somewhat local, and Mr. Aplin, in the paper above referred to, says that the distribution of the Red-backed Shrike "seems, within certain limits, to be determined mainly by the nature of the soil and climate, and the bearing of these upon the insect life of a particular district. The favourite food of this Shrike during its residence with us consists of large-bodied insects, especially beetles and bees; and I believe that the comparative abundance or scarcity of that food in any given district largely determines the numerical strength or weakness of this species therein. A warm soil (*e.g.*, sand, gravel, limestone, or chalk) is attractive, though not absolutely necessary to this Shrike, which is also affected indirectly by climate. The 'tall tangled hedge-row' or 'Bullfinch,' so often insisted upon as attractive to this bird, is certainly not essential to its welfare, although the Butcher-bird is undoubtedly fond of these big hedges with their long thorns for impaling prey, and the convenient nesting sites they afford, but they will not of themselves induce the Shrike to adopt a particular district. In North Oxfordshire and in Northamptonshire tall hedges are common, but this Shrike is not; and I gather from a recent writer that even in 'High Leicestershire' the Butcher-bird is decidedly scarce. On the other hand, open commons, and huge wild sides of sheltered valleys, if they are furnished with scattered bushes and overgrown clumps of the same, are often favourite localities. It likes also to haunt the neighbourhood of gardens, and late in July and in August it often brings its young brood into both pleasure- and kitchen-gardens."

The note of the present species is a kind of *chack*, generally uttered as the bird sits on its perch, and is accompanied by a jerk of the head to one side or the other. Besides the small birds spoken of above, the Red-backed Shrike feeds principally on insects, and devours humble-bees, as well as other kinds of bees and wasps, but it will also catch lizards and mice.

Nest.—A ragged and untidy structure, composed of tangled moss and roots, lined with dry grasses, wool, and a little hair; it is generally found in a thorny hedge or a thickly-wooded dell. Judging from the specimens exhibited in the British Museum, the young birds must have some difficulty in keeping in the nest provided for them, as soon as they get to any size.

Eggs.—From four to six in number, and very variable in colour and markings. The ground-colour is mainly of two types, creamy-white or greenish-white. The former varies from a rich cream-colour to a clay-white, or even rufescent. The markings consist of clearly defined spots of rufous, with numerous and distinct underlying spots of violet-grey. There is in most cases a tendency to form a ring, generally, but not invariably, at the large end of the egg, which is sometimes covered by confluent spots, which form a cloud. In the greenish-white type of egg, the tint varies from olive to pale green, and the markings are brown, the underlying spots being violet-grey, the latter being very large and distinct; there is the same tendency to form a ring near the larger end as in the cream-coloured type, but many eggs have the spots distributed over the whole surface. Axis, 0·8–0·95 inch; diam, 0·65–0·7. (Plate XXXI., Fig 4.)

THE WOODCHAT. LANIUS POMERANUS.

Lanius rutilus, Macg., Br. B., iii., p. 502 (1840); Lilford, Col. Fig. Br. B., pt. xv. (1890).
Lanius auriculatus, P. L. S. Mull.; Dresser, B. Eur., iii., p. 407, pl. 151 (1871); Newt. ed. Yarr., ii., p. 215 (1872); Gadow, Cat. B. Brit. Mus., viii., p. 283 (1883).
Lanius pomeranus, Scop.; B. O. U. List Br. B., p. 38 (1883); Saunders, Man., p. 145 (1889)
Lanius rufus, Briss.; Seeb., Br. B., i., p. 610 (1883).

Adult Male.—Back black, with conspicuously white scapulars; lower back bluish-grey; the rump and upper tail-coverts white; wings black, with a large white speculum formed by the white bases to the primaries; tail-feathers black, with a narrow white tip, the bases of the feathers white, scarcely visible on the centre ones, but extending gradually towards the outer ones, which are more broadly tipped with white, the outermost one white along its outer web; crown of head and hind-neck rich chestnut; a broad frontal band, as well as the feathers round the eye and the ear-coverts black, extending in a band down the sides of the neck; a basal spot of white on each side of the base of the forehead; cheeks and under surface of body, including the under wing-coverts, creamy-white; the lower primary-coverts dusky blackish, forming a patch near the edge of the wing; quills dusky below, white along the inner webs; bill and feet black; iris hazel. Total length, 7·5 inches; culmen, 0·75; wing, 4·0; tail, 3·1; tarsus, 1·05.

Adult Female.—Similar to the male, but browner, the parts which are black in the male being blackish-brown in the female; the frontal band, as well as the ear-coverts, and the sides of the neck mixed with brown, and therefore not so distinct as in the male; otherwise as in the latter sex. Total length, 7·5 inches; wing, 3·9.

Young.—Paler brown than the adult female, the scapulars and margins of the wing-coverts and quills sandy-buff; rump and upper tail-coverts also sandy-buff; crown and hind-neck pale rufous, mottled with sandy-buff and dusky cross-lines; ear-coverts dusky blackish; no black on the forehead; under-parts white, freckled with narrow dusky lines on the chest.

Range in Great Britain.—A rare and occasional visitor to the southern and eastern counties of England. Two instances of its breeding near Freshwater, in the Isle of Wight, are apparently well established. It has occurred as far west as Cornwall, and as far north as Northumberland and Cumberland, but there are no Scotch or Irish records.

Range outside the British Islands.—A summer visitor throughout the greater part of Europe, being very common in the countries of the Mediterranean. It ranges as high north as the Baltic and the valley of the Vistula, and it is found as far to the eastward as the Caucasus and Western Persia, and occurs frequently in Asia Minor, Greece, and Palestine. Its winter home lies in North-eastern Africa and in Senegambia, and the bird probably migrates to a certain extent across the Sahara. It does not follow the usual route of migration down the Nile Valley, so far south as the Red-backed Shrike, as the Woodchat is not found in Southern Africa at all, and is replaced on the west coast of Africa by a distinct species, *L. rutilans*

Habits.—Resemble those of other Shrikes, feeding largely on insects, especially grasshoppers and beetles. The note is said to be a harsh *krah kack krah*, but, according to Mr. Howard Saunders, the male has a low and rather pretty song in spring, and shows great capacity for imitating the notes of other birds. The Woodchat is a very conspicuous object in the countries it frequents, its white breast being easily seen, as it sits on the topmost twig of a bush or tree, on which it mounts guard. It is said to display great affection for its young. Mr. Seebohm writes: "In Greece and Asia Minor I found the Woodchat very common. With the exception of the Black-headed Bunting I found more of its nests than those of any other bird. It is only a summer visitor to both of these countries, belonging neither to the earliest nor to the latest birds of passage. It arrives about the first of April, at least three weeks after the Swallows, whose range extends into the Arctic Regions, but three weeks before the Tree-Warblers (*Hypotais elaica* and *H. olivetorum*), whose range does not extend north of the basin of the Mediterranean. It is a very conspicuous bird, and cannot easily be overlooked, and is very common in the olive-forests. As you descend the mountains, the olives in the valley look like a dense forest, often extending twenty miles or more; but when you descend into them you find that the trees are planted at some distance from each other, and that a considerable cultivation of vines, mulberries, and sometimes Indian corn, is carried on between them. But it is perhaps on the lower slopes of the hills, where the trees are more stunted and the ground is less cultivated, that the Woodchat is oftenest to be seen. Perched conspicuously upon the top of a bush, or even a lofty tree, it appears ever to be on the watch for the chance of pouncing down upon some unwary insect that may come within its range. Its song is by no means unmusical, and very gentle to proceed from such raptorial jaws. It reminded me very much of the twittering of a Swallow or the warble of a Starling. Some of its call-notes, however, are loud and harsh enough; and I at first thought that it was imitating the notes of other birds in order to attract them within reach; but inasmuch as the greater number of notes it apparently imitated were of birds far too powerful for it to grapple with, such cannot be the case. The first nest I found in Greece was at Delphi, not very far from the ruins of the Temple of Apollo. This nest contained six eggs on the 5th of May. Higher than 2,000 feet above the level of the sea the bird became much rarer; and in the pine-region, 4,000 feet above the sea-level, its place seemed to be entirely taken by the Red-backed Shrike; but as soon as we descended below the pine-region it again became extremely common; and we found the greater number of full clutches during the last fortnight of May."

Nest.—Compact and well-built, and placed in the fork of a tree, generally without any attempt at concealment. In Greece Mr. Seebohm found the nest almost invariably in the fork of an olive-tree, and "composed principally of cudweed

(*Gnaphalium*), a little hairy-stemmed, hairy-leaved, plant with three or four small thistle-like flowers, growing from two to four inches high. These the Woodchats pulled out by the roots, and wove together into a compact warm nest, which did not differ very much in colour from the bark of the olive-trees. Occasionally a twig or two was introduced; but for the most part the cudweed, with its flowers and its root, was foundation, wall, and lining for the nest."

Eggs.—From four to six in number. They present the same divergent colours as do the eggs of the Red-backed Shrike; some of the eggs have the ground-colour greenish-white, with coarse spots and markings of greenish-brown and underlying mottling and spots of pale violet-grey; these markings are sometimes distributed over the larger end of the egg, and have a tendency to form a ring. In another type of egg the ground-colour is clay-brown with olive-brown mottlings and spots, and very distinct underlying spots of violet-grey. In a third type the colour is creamy-buff, of a more or less rich tint, the over-lying spots being reddish-brown with very distinct under-lying spots and mottlings of grey: these grey spots are as distinct as in the greenish-white type of egg, but the over-lying markings are darker. Axis, 0·85–0·95 inch; diam., 0·65–0·7.

THE CHATTERERS. FAMILY AMPELIDÆ.

These birds, familiarly known as Wax-wings, must not be confounded with the American Chatterers, or *Cotingidæ*. The peculiar wax-like appendages to the quills and tail-feathers are the chief external characteristics of the family, and on that account the name of Wax-wings would have been the more suitable one; but there are in America certain genera, such as *Phainoptila* and *Ptilogonys*, which are apparently referable to the same family as *Ampelis*, but which do not possess the wax-like appendages to the wings and tail, and, therefore, the name of "Wax"-wing is inapplicable to them. The *Ampelidæ* have only nine primaries in the wing, the bill swollen with a rounded nostril, and are also remarkable for a long silky crest.

THE WAX-WINGS. GENUS AMPELIS.

Ampelis, Linn., Syst. Nat., i., p. 297 (1766).

Type, *A. garrulus*, Linn.

THE WAX-WING. AMPELIS GARRULUS.

(*Plate XIX.*)

Ampelis garrulus, Linn., S. N., i., p. 297 (1766); Dresser, B. Eur., iii., p. 429, pl. 155 (1873); Newt. ed. Yarr., i., p. 523 (1874); B. O. U. List Br. B., p. 39 (1883); Seeb., Br. B., ii., p. 3 (1884); Sharpe, Cat. B. Brit. Mus., x., p. 212 (1885); Lilford, Col. Fig. Br. B., pt. vi. (1888); Saunders, Man., p. 147 (1889).

Bombycilla garrula, Macg., Br. B., iii., p. 533 (1840).

Adult Male.—General colour drab-brown, greyer towards the rump, and pure grey on the upper tail-coverts; wing-coverts like the back, the bases grey; primary-coverts black, tipped with white; quills black, white at the tip, and yellow towards the end of the outer web; the secondaries grey, with a subterminal blackish shade before the white tip, the innermost secondaries browner, the white-tipped feathers with produced and flattered shafts forming a wax-like appendage; tail grey, tipped with yellow, with a broad subterminal bar of black, and, in old individuals, a tiny shaft-tip of wax-like red; head and an ample crest drab-brown; fore part of crown and region above the eyes chestnut; the base of the forehead, region of the eye, black, extending above the latter to the nape; sides of face and ear-coverts pale rufous-drab, a little more chestnut on the hinder cheeks; on the fore part of the cheeks a white spot; a narrow line of white above the ear-coverts; throat black; remainder of under surface light drab, greyer on the breast and abdomen, the vent inclining to yellowish-white; under tail-coverts deep chestnut; thighs ashy-grey; bill black, paler at the base; feet and claws black; iris hazel. Total length, 7·25 inches; culmen, 0·6; wing, 4·6; tail, 2·55; tarsus, 0·75.

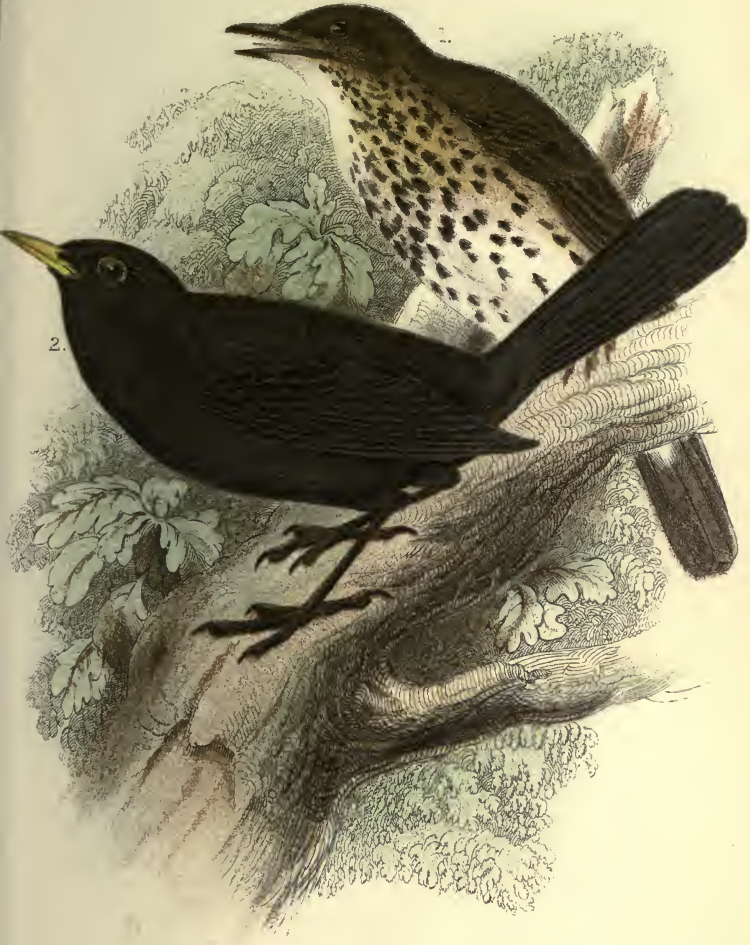
Adult Female.—Only differs from the male in having a smaller crest, and the wax-like appendages fewer in number on the wings, and never apparently developed on the tail. Total length, 7 inches; wing, 4·4.

Young.—Not like the adults, being dark olive-brown above, the feathers edged with whity-brown; head brown, with a frontal band of black, and margined behind with a narrow line of white; ear-coverts and cheeks brown, with a white spot on the fore part of the latter; a narrow moustachial line of black; under-parts white, tinged with yellow, which becomes more marked on the vent; the throat, breast, and flanks brown, streaked with pale fulvous edges to the feathers.

Range in Great Britain.—An irregular visitant in autumn and winter, sometimes coming in large numbers, though it occurs nearly every year. The years when great invasions have taken place in this country have been recorded as follows: 1830–31, 1834–35, 1849–50, 1866–67, and 1872–73; but the earliest notice of the species in England dates back to 1681, when an account of its occurrence near York was published in the "Philosophical Transactions." The Wax-wing has occurred in nearly every part of England and Scotland, but the Irish records are fewer. As might be expected, the bulk of the specimens are obtained in our eastern counties, where, in some of the years above-mentioned, large numbers have been shot. During the migration of the winter of 1872 many were noticed in the neighbourhood of the north of London.

Range outside the British Islands.—The Wax-wing is a circumpolar bird, and is an inhabitant of high northern latitudes in Europe, Asia, and North America. In the temperate portions of the latter continent its place is taken by an allied species, the Cedar-bird (*Ampelis cedrorum*), which is smaller, and is distinguished by its white under tail-coverts and olive-yellow flanks.

The Wax-wing is found in winter in most of the countries of Europe, though of irregular occurrence; it has not yet been found in the Pyrenees or the Spanish peninsula, but has been known to reach the south of France, and the northern provinces of Italy, as well as of Turkey. At the same time of year it visits Central Asia, North China, and the northern island of Japan. Its breeding quarters are the pine regions in the north of the Old and New Worlds, about the line of the Arctic Circle. It has been recorded as nesting in North-eastern Norway, in Lapland, in Finland, and Mr. Seebohm says that he met with it during the breeding season in the valleys of the Petchora and the Yenesei. Although the species occurs in the interior of



I. SONG-THRUSH. 2. BLACKBIRD.

[illegible]

Alaska, apparently somewhat plentifully, only once has its nest been found in the territory; this was by Kennicott, near Fort Yukon, in July, 1861. The species must surely nest elsewhere in the Arctic portions of North America, as it has been observed on the Anderson river during the breeding-time; but at present the Alaskan record is the only one for the whole of North America.

Habits.—Although such a common bird in collections, very little has been recorded of the habits of the Wax-wing, and even those naturalists who go in search of the nest do not always succeed in finding it, for both in summer and winter the bird appears to be very erratic in its choice of a home, being plentiful in some years in certain districts and then not appearing again in the neighbourhood for a long time. In its motions the Wax-wing is a very active bird, and is a beautiful creature in life, the crested head and the yellow bands on the wings and tail rendering it very conspicuous. The food consists of insects during the summer, varied with a few berries, but in the autumn and winter the bird subsists on berries of such plants as privet, white-thorn, guelder-rose and dog-rose; at this time of year they become very fat, and are sold in large numbers for food in the Russian markets, being occasionally sent over to London.

Mr. Seebohm says that a pair of birds which he kept in confinement were most voracious eaters, and their cage required cleaning several times a day. They were very active and restless, and even when perched at rest seemed to be continually moving their heads. If alarmed they would stretch out their necks to almost double the usual length. They were remarkably silent birds, the only note heard by him being a "*cir-ir-ir-ir-re*," very similar to a well-known note of the Blue Tit. Occasionally this succession of notes was repeated so rapidly as to form a trill like the song of the Redpoll.

Nest.—According to Mr. Seebohm, the nest is a large and very compact structure, the outside diameter of one in his possession being seven inches and the inside four inches; it is about four inches high outside, and nearly two inches deep. The foundation is made of twigs of spruce-fir and reindeer-moss. The nest itself is composed of feathers and black hair-lichen, interwoven together with very slender twigs and a little moss and inner bark, the feathers being most numerous in the lining.

Eggs.—From five to six and occasionally seven in number. They are quite unmistakable, being of a lilac-grey or stone-grey ground-colour, with spots of black or blackish-brown, varying in size and intensity, but pretty equally distributed over the surface of the eggs, and accompanied by underlying spots of violet-grey, more or less distinctly indicated. Axis, 0·95–1·05 inch; diam., 0·65–0·75.

THE WARBLERS. FAMILY SYLVIIDÆ.

This is one of the largest families of birds in the Old World, and embraces within its limits an assemblage of widely differing forms. Thus it is extremely difficult to lay down characters by which a student of ornithology may recognise a Sylviine bird, when he sees one alive or has a specimen in his hand. The form of bill is no certain indication, for the form of this organ varies greatly in the Warblers, as it does in the Thrushes. In most instances the bill is rather long, furnished with a small notch before the end of the upper mandible, and having rictal bristles at the gape. In many Warblers, however, the rictal bristles and the notch in the bill are obsolete, while the latter organ is in many forms so flattened that the birds might well be taken for Flycatchers. Warblers can, however, be distinguished from Thrushes by the scutellation of the tarsus, the members of the latter family always having a plain surface to the tarsus both before and behind, while in the Warblers there are indications of scales on the front aspect of the tarsal envelope.

There is, however, one great and fundamental difference between the *Sylviidæ* and the *Turdidæ*, first insisted upon by Mr. Seebohm in the fifth volume of the "Catalogue of Birds," and that difference consists in the nature of the plumage of the young birds. Warblers never have spotted young, the latter resembling the adults in plumage, or at least differing very slightly from the latter. Accompanying this peculiarity of the immature plumage, there ensues a corresponding difference in the method of moulting in the two families. Thus a young Warbler, during the first autumn of its life, goes through an entire moult, but the plumage thus acquired is not very different from the one it wore before, and its first winter dress is very similar to that of its parents. If there is any variation in the winter plumage of the adult and young birds, it generally consists in the under surface of the latter having a tinge of yellow. Before returning, however, to its breeding place in the following spring, a migratory Warbler (and most Warblers are migratory) goes through another complete moult in its winter quarters, so that the spring plumage of both old and young bird is precisely the same. In the Thrushes, as will be seen later on, the method of moulting and the plumage of the young birds is different from that of the Warblers.

THE TRUE WARBLERS. GENUS SYLVIA.

Sylvia, Scop., Ann. I. Hist. Nat., p. 154 (1769).
Type, *S. sylvia* (Linn.).

The classification of the Warblers depends as much on the style of plumage as upon structural characters, and it is not surprising, therefore, to find that it is a task of extreme difficulty to classify these birds in a satisfactory manner. The monographic work done by Mr. Seebohm in the "Catalogue of Birds" is of great assistance in the study of the Warblers, but it is remarkable that the characters assigned for the differentiation of such obviously distinct forms as, for instance, a Garden-Warbler and a Reed-Warbler, should be of so trivial a character.

Thus, if we summarise the peculiar features which are supposed to be distinctive of the genus *Sylvia* we find that they amount to the following: Bill typical, not flattened like that of a Reed-Warbler, but somewhat slender, with rounded culmen and exposed nostrils, and the base of the lower mandible paler; the bastard-primary considerably less than half the second quill, but extending well beyond the primary-coverts, occasionally not reaching to this distance; the axillaries never yellow, but either white or grey or brown; the bill from the gape to the tip less than the length of the middle toe and claw; the rictal bristles, three in number, weak, and the supplementary hairs nearly obsolete, according to Mr. Oates, who also gives as characters that the feathers of the forehead are decomposed and rough, the tarsus stout and short, and the tail very slightly graduated.

The true Warblers all appear to subsist on insects during the summer, and to feed largely on berries during the autumn, before they migrate.

THE BARRED WARBLER. SYLVIA NISORIA.

Motacilla nisoria, Bechst., Naturg. Deutschl., iv., p. 580, pl. xvii. (1795).

Sylvia nisoria, Dresser, B. Eur., ii., p. 435, pl. 68 (1874); Seeb., Cat. B. Brit. Mus., v., p. 6 (1881); id. Hist. Br. B., i., p. 387 (1883); B. O. U. List Br. B., p. 13 (1883); Saunders, Man., p. 51 (1889); Lilford, Col. Fig. Brit. B., pt. xv. (1890).

Adult Male.—General colour above greyish-brown, the head and rump, as well as the upper tail-coverts being greyer than the back, and the wing-coverts and quills browner, especially the inner secondary quills, which are broadly tipped with white; the upper surface barred with greyish-white, with which colour the feathers are margined and tipped, and the pale tips to the feathers are made more distinct by a subterminal bar of dark brown; under surface of body greyish-white, the sides of the body and flanks slightly washed with brown, a shade of which colour also appears on the breast and under tail-coverts; under wing-coverts and axillaries also greyish-white, barred across with dark grey; bill dark brown, the base of the lower mandible pale; feet and claws slaty-brown; iris pale yellow. Total length, 6·5 inches; culmen, 0·55; wing, 3·3; tail, 2·5; tarsus, 0·85.

Adult Female.—Similar to the male in colour. Total length, 6·3 inches; wing, 3·35.

Winter Plumage.—Similar to the summer plumage, but a little browner.

Young.—Like the adults, but uniform underneath and browner on the upper surface, which is slightly mottled with lighter brown or buff edges to the feathers, the wing-coverts and inner secondaries distinctly edged with buffy-white; the under surface washed with ochreous buff on the breast and sides.

NOTE.—The Barred Warbler may be distinguished from all the other European species by the barring of the upper and under surface, and there is no other species which has the *upper and under tail-coverts barred.* The wing is very pointed, the second and third primaries being the longest, and about equal in length; the first or bastard-primary is very small, and falls short of the primary-coverts by about 0·4 inch. The rictal bristles are few in number and slender.

Range in Great Britain.—A rare accidental visitor, but perhaps occurring more frequently than is generally supposed. The first specimen recorded as British was exhibited by Professor Newton at a meeting of the Zoological Society, in March, 1879. In 1884 three specimens were procured: one by the Rev. H. H. Slater, on the coast of Yorkshire, at the end of August, and another near Blakeney, in Norfolk, in the beginning of September; the third specimen was shot on the 16th of August, in the Isle of Skye. In 1884 a specimen was procured at Belmullet, in Ireland; another in Norfolk, in 1888; and two more specimens were obtained in Yorkshire in 1892 and 1893 respectively.

Range outside the British Islands.—The northern breeding-range of this species appears to be Denmark and Southern Sweden, nor is it known to breed west of the Rhine. Throughout Central Europe it is a summer visitor, and extends as far east as Turkestan and Kashgar, in Central Asia. Mr. Howard Saunders considers that the vicinity of Nice is about the western limit of this Warbler's migration, "and in Italy it appears to be restricted to the northern and north-eastern provinces."

One winter home of this species appears to be North-eastern Africa. It has not been found in any part of the Indian peninsula, but occurs in winter on the Persian Gulf, which locality is, in all probability, the winter residence of the Barred Warblers which breed in Central Asia.

Habits.—The present species is a rather late arrival at its breeding quarters in Europe, though it is said that the spring migration lasts for about eight weeks, from towards the end of March to about the middle of May; but more than half of the summer migrants have arrived before this species is seen. Owing to its skulking habits it is not easy of observation, but is more readily detected by its song, which is said to be like that of a Whitethroat, but in some of its melody to rival that of the Black-cap. Like the latter bird it evinces great partiality for elderberries in the autumn. Naumann renders the call-note of the Barred Warbler as *chek*, and like the Whitethroat it has a sort of snarling *rhar* when alarmed; like the last-named bird it ascends into the air for a short distance, and sings while descending.

Nest.—Unlike that of most Warblers, being a somewhat bulky structure and not semi-transparent, like those of its allies. Mr. Seebohm says that it is "composed of dried grass-stalks and roots, with generally some small-leaved plants, cobwebs, thistle-down, or other woolly material mixed with it. Outside it is rough enough; but inside it is very neat and round, rather deep, and lined with a few fine roots, cobwebs, or horse-hair. The nest is well concealed, and is usually built on a thorn-bush, not far from the ground. It is said to be sometimes almost on the ground; but an instance has been recorded of a nest being built on the topmost twigs of a birch at a height of 25 feet from the ground."

Eggs.—From four to five in number, rarely six. They cannot well be confounded with those of any other European Warbler, as they are so very faintly marked in comparison with most Warblers' eggs. Where they are plainly marked, they resemble most the eggs of the Common Whitethroat. The ground-colour is creamy-white or very pale olive, faintly spotted and mottled with greenish-brown, but the spots so slightly indicated as to appear in most cases obsolete, and the only visible marking are the underlying spots of violet-grey. Where the overlying spots are obvious, they are distributed over the whole egg, but cluster more particularly round the larger end, the underlying grey spots being for the most part hidden. Axis, 0·8–0·9 inch; diam., 0·55–0·65.

THE WHITETHROAT. SYLVIA SYLVIA.

(*Plate XX., Fig.* 1.)

Motacilla sylvia, Linn., S. N., i., p. 330 (1766).

Sylvia cinerea, Macg., Br. B., ii., p. 350 (1839); Seeb., Cat. B. Brit. Mus., v., p. 8 (1881); B. O. U. List Br. B., p. 11 (1883); Seeb., Hist. Br. B., i., p. 405 (1883); Lilford, Col. Fig. Brit. B., pt. 1 (1885); Saunders, Man., p. 41 (1889)

Sylvia rufa, Newt. ed. Yarr., i., p. 406 (1873); Dresser, B. Eur., ii., p. 377, pl. 57 (1876).

Adult Male.—Greyish-brown above, with the wings rather darker, the head ashy-grey, contrasting somewhat with the back, the upper tail-coverts also ashy-grey; the tail-feathers dark greyish-brown, the outer ones paler and broadly edged with white; wing-coverts edged with pale chestnut, and the innermost secondaries with broad chestnut edges; under surface of the body white, the breast pinkish or vinous, contrasting with the pure white of the throat and abdomen, the flanks rather browner; axillaries and under wing-coverts pale grey; quill-lining light brown; bill dark brown, paler at the base of the lower mandible; feet and claws pale brown; iris light hazel. Total length, 5·6 inches; culmen, 0·55; wing, 2·7; tail, 2·3; tarsus, 0·8.

Adult Female.—Similar to the male, but rather browner, the head and upper tail-coverts being more greyish-brown like the back; the under surface of the body is whiter, the pink tinge of the breast being less distinct, or altogether absent. Total length, 5·5 inches; wing, 2·8.

Winter Plumage.—The grey of the head and the pink colour on the breast entirely disappears in the male, which is exactly like the female at this season of the year. The birds in winter plumage are rather browner than they are in summer, and, like the young, have the head like the back.

Young.—Browner than the adults, the head being like the back, the rufous on the wing-coverts strongly pronounced; throat and abdomen white; the lower throat, breast, and sides of the body sandy-buff, without any tinge of pink.

NOTE.—The Whitethroat can always be distinguished at any age by its very small first, or bastard, primary quill, which never extends beyond the tips of the primary-coverts. The upper and under tail-coverts are never barred as in the preceding species, and the pale chestnut edgings to the wing-coverts and quills are also a distinguishing character.

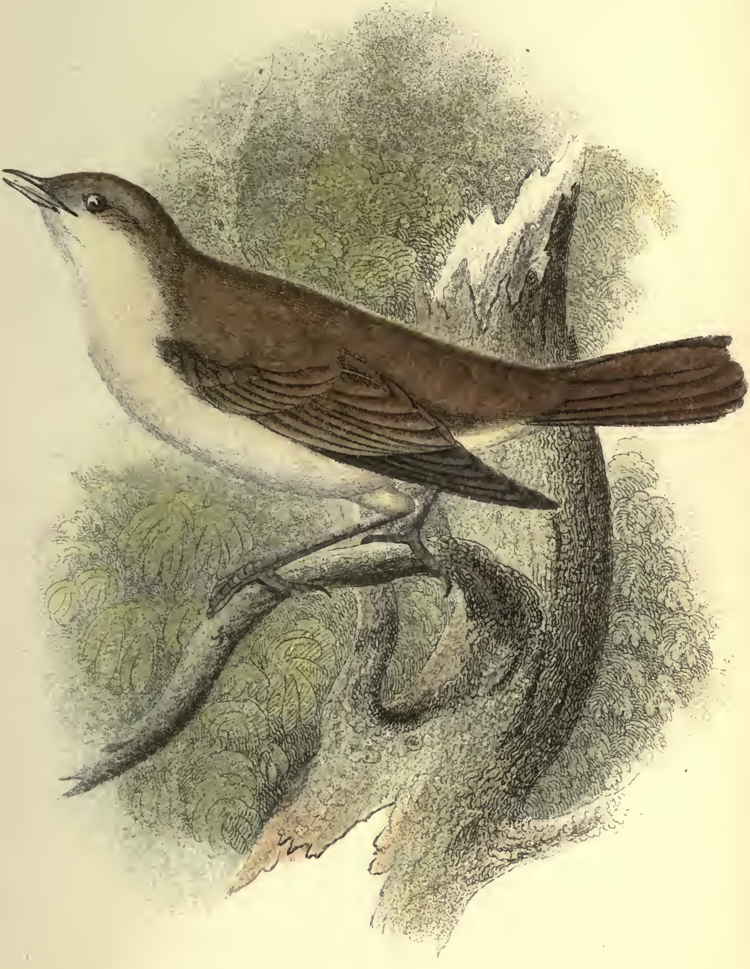
Range in Great Britain.—A summer visitor, arriving early in April. It is found everywhere in Engand, Wales, and Ireland, and also over the greater part of Scotland, excepting the northern portion, and the Outer Hebrides. It is an occasional visitor only to the Orkneys and Shetland Isles.

Range outside the British Islands.—Occurs throughout the greater part of Europe, but is rarer in the Mediterranean countries, where it is known chiefly as a winter visitor, or more especially as a migrant. Its breeding range extends as high as 65° N. lat. in Scandinavia, and to 60° in the Ural Mountains, and it apparently extends eastwards as far as Persia and Turkestan, but in the latter country it is probably replaced by an allied race, *Sylvia fuscipilea*, which inhabits the Altai and Tianschan Mountains, and it is this race which winters in North-western India. The specimens in the British Museum show the slightly darker head, from which the eastern race takes its name; but they seem to be approached in this respect by many European examples, though Mr. Seebohm says that they are not only larger birds, as a rule, but lay larger eggs.

In winter the Whitethroat migrates by the Nile Valley, through North-eastern Africa, to the Cape Colony and Damara Land.

Habits.—This is a very lively little bird, and one of the best known of our summer visitors, arriving towards the end of April, and leaving for its African winter home in the end of September. It is found in all sorts of situations, and builds its nest in a variety of places, but is, perhaps, more often seen in the hedge-rows than anywhere else, particularly where brambles or beds of nettles clothe the sides. In the latter it often places its nest, suspended in the stalks and well hidden from sight; it is doubtless this fact that has gained for the bird the name of "Nettle-Creeper" in many districts. In Northamptonshire we always knew it as the "Hay-Chat," and another myth connected with its nesting in our schoolboy days in the above-named county, was that when one could see through the nest, the latter was ready for eggs. As its framework is very slight, the nest is always more or less transparent. As a rule, the Whitethroat is easily observed, and is a frequent object in any walk in the country near London, especially in the market-gardens in the western suburbs, and the white throat of the bird renders him at once conspicuous, as he flies across the road on to the top of a

PLATE XXIII.



NIGHTINGALE.

hedge, and, with a flick of his tail, disappears on the other side. The feathers of the head are also much puffed out, giving the appearance of its being too big for the little body of the bird. The female is less frequently seen, as she keeps much more to the lower parts of the hedges, or to the thickest brambles and bushes. The male, on the other hand, often springs up into the air like a Tit-Lark, and descends singing to his perch, often in a jerking manner, with his tail expanded. In the autumn, like other Warblers, it devours numbers of currants and berries, and Mr. Dixon states that it also eats the corn when it is in a soft and milky state. We have known them to work great havoc in a row of peas. During the summer, however, the food of the Whitethroat consists almost entirely of insects, and it eats large numbers of Daddy Longlegs, and it may often be observed flying off from its perch and catching insects in the air, like a Flycatcher.

Nest.—A very slight, but deep, structure, composed of dry grass-stems and bents, and lined with thin roots and horse-hair. It is generally placed low down in the overhanging boughs of a white-thorn or other bush, or amongst the smaller bramble-stems, or, as said before, suspended in the nettles.

Eggs.—From four to six in number. The ground-colour varies much. The predominant colour is olive, the ground-colour of the egg being brownish-white, thickly speckled with olive-brown, and very plainly spotted with violet-grey, of which the underlying spots are really composed, but in many instances these are so distinct that they appear to constitute the overlying spots, and are generally congregated at the larger end of the egg. Other types of eggs have the ground-colour greenish-white, and the spots are greenish-brown and violet-grey, never so strongly indicated as in the first-mentioned variety. A rarer type of egg has the ground-colour light green, with tiny brown dots and larger markings of violet-grey. One remarkable clutch from Epping Forest, in the Salrin-Godman collection, has the greenish-white ground-colour of the eggs almost entirely obscured by blotches of reddish-brown, while the darker markings are almost black, and are congregrated at the large end of the egg in great blotches. Axis, 0·7–0·8 inch; diam., 0·5–0·6.

THE LESSER WHITETHROAT. SYLVIA CURRUCA.

(*Plate XX., Fig.* 2.)

Motacilla curruca, Linn., S. N., i., p. 329 (1766).
Sylvia garrula, Macg., Br. B., ii., p. 357 (1839).
Sylvia curruca, Newt. ed. Yarr., i., p. 410 (1873); Dresser, B. Eur., ii., p. 383, pl. 58 (1876); Seeb., Cat. B. Brit. Mus., v., p. 16 (1881); id. Hist. Br. B., i., p. 410 (1883); B. O. U. List Br. B., p. 12 (1883); Lilford, Col. Fig. Br. B., pt. ii. (1886); Saunders, Man., p. 43 (1889).

Adult Male.—General colour above pale ashy-brown or Mouse-grey; the head light slaty-grey, contrasting with the back; lores, sides of face, and ear-coverts dusky ash-colour; the eyelid whitish; over the eye a faintly indicated eyebrow of hoary-grey; wing-coverts like the back, the greater series externally lighter and more sandy-brown; quills sepia-brown, with a pale fringe to the tips, externally lighter brown, the secondaries more sandy-brown like the greater coverts; tail-feathers sepia-brown, edged with ashy, the outer feathers dingy ashy-whitish along the outer web and near the end of the inner one; under surface of body pure white, with a pinkish blush on the fore-neck and breast, deepening into rosy-isabelline on the sides of the body and flanks; under wing-coverts and axillaries white, with a rosy isabelline tinge on the latter, and on the quill-lining; bill dusky grey, pale at the base of the lower mandible; feet and claws leaden grey; iris light brown. Total length, 5·2 inches; culmen, 0·35; wing, 2·6; tail, 2·15; tarsus, 0·85.

Adult Female.—Similar in colour to the male, but having the brown of the back a little further extended on to the crown. Total length, 5 inches; wing, 2·55.

Winter Plumage.—Scarcely differs from the summer plumage, but is a little browner on the breast and flanks, without any pinkish tinge.

Young.—Resembles the adults, but is still more plainly washed with brown below, and has the white on the outer tail-feather much more marked, the greater portion being white with a black shaft, and leaving an oblique black mark along the greater part of the inner web.

NOTE.—The Lesser Whitethroat is, as its name implies, a smaller bird than the Common Whitethroat, though not to any remarkable extent, for the wing in the smaller species measures 2·45 to 2·65 inches, while in *S. sylvia* it measures 2·5 to 2·9, so that large examples of the former exceed in length of wing small examples of the latter. The Lesser Whitethroat belongs to the group of Warblers, which have the first, or bastard-primary, longer than the primary-coverts, thus differing from the ordinary Whitethroat and Garden Warbler, but agreeing in this respect with the Blackcap and Orphean Warbler. The wing, however, is less than three inches in length, and the grey head likewise distinguishes the Lesser Whitethroat from the above-mentioned species.

Range in Great Britain.—Not so universally distributed as the Whitethroat, though it is found over the southern and midland counties of England, becoming gradually rarer towards the north and west. In Durham, Northumberland, and Cumberland it is scarce, and according to notes published by Mr. Howard Saunders in his "Manual" from the pen of Mr. Robert Service, it is "seldom met with in Kirkcudbrightshire, although better known in Dumfriesshire and down by the borders, where its nest has been twice obtained; it is said to breed sparingly and locally as far as Stirlingshire; but in the northern counties, and in the outlying islands, the evidence tends to show that it is at most a rare straggler." One specimen has been recorded as shot in Aberdeenshire, on the 4th of November, a somewhat extraordinary date, but confirmed by the capture of a specimen near Brighton in the same month, while the late Dr. Saxby saw a specimen in Unst in September. Only a single occurrence in Ireland is known.

Range outside the British Islands.—The present species is known to breed throughout the greater part of Europe, extending northward beyond the Arctic Circle, but not to the limit of forest-growth. It is also found as far east as Asia Minor and Palestine, but to the eastward its place is taken by *Sylvia affinis* from the Lower Volga and Northern Persia to Siberia and even North-eastern China. The winter home of the Lesser Whitethroat is in Africa, but it does not go so far south as *S. sylvia;* it visits North-eastern and Northern Africa, and Mr. Howard Saunders states that it likewise winters sparingly in South-eastern Spain.

Habits.—These differ somewhat from those of the Common

Whitethroat, inasmuch as the Lesser Whitethroat is a more retiring bird, and does not place itself so much in evidence as its ally. It is quite as unobtrusive as the Garden Warbler, and, like that species, frequents the most secluded localities. It arrives in England somewhat later than *S. sylvia*, and as the foliage is then more advanced, this may be one reason why the Lesser Whitethroat is less noticed than that species. Like the latter it frequents hedgerows and lanes, but is more often seen in the higher trees than the Whitethroat. Its food consists of insects, in pursuit of which it hops from twig to twig, and examines all the leaves, after the fashion of Warblers; it also varies its diet with fruit, and is said to be especially fond of cherries and red currants, while we can affirm that, like the Whitethroat, it is capable of doing considerable damage among the peas. In the autumn it feeds on berries. The song of the Lesser Whitethroat is described by Mr. Seebohm as "a monotonous trill, sometimes like the first notes of the song of the Yellow Bunting, but it is frequently preceded by a few notes, which, though they are not very varied nor very loud, are by no means unmusical, and somewhat resemble the twittering of a Swallow. Its call-note resembles the syllable *check* several times repeated and sometimes varied with a more guttural cry." Like other Warblers, it utters a harsh grating note when alarmed or disturbed near its nesting-place.

Nest.—Not so deep as that of the Common Whitethroat, but very similar in construction, though somewhat more coarsely made. The materials are fine grass-stems, and spiders' webs or the cocoons of caterpillars are used to bind it together, while the linings consist of fine rootlets or horsehair. It is sometimes placed in the higher branches of a tall hedgerow or in bushes, but is also to be found in brambles or furze.

Eggs.—Four to six in number. The ground-colour is china-white, spotted with light brown or greenish-brown, and having very distinct underlying blotches and spots of violet-grey, generally forming a ring near the larger end of the egg. In some instances the darker markings are accompanied by absolutely black spots, distributed irregularly over the egg. Axis, 0·65–0·75 inch; diam., 0·5–0·55.

THE ORPHEAN WARBLER. SYLVIA ORPHEUS.

Sylvia orphea, Temm.; Newt. ed. Yarr., i., p. 423 (1873); Dresser, B. Eur., ii., p. 411, pl. 64 (1874); B. O. U. List Br. B., p. 12 (1883); Saunders, Man., p. 45 (1889); Lilford, Col. Fig. Brit. B., pt. xv. (1890).
Sylvia orpheus, Seeb., Cat. B. Brit. Mus., v., p. 14 (1881); id. Hist. Br. B., i., p. 390 (1883).

Adult Male.—General colour above slaty-grey, a little clearer on the hind-neck; wing-coverts like the back; the bastard-wings, primary-coverts, and quills blackish-brown, edged with ashy-grey; tail-feathers blackish, edged with ashy, and slightly tipped with white, increasing in extent towards the outermost, which is white along the outer web and at the tip of the inner web for a considerable extent; head dusky blackish, including the lores and ear-coverts, forming a cap which extends as far as the nape; cheeks, throat, and under surface of body white; the sides of the breast and flanks ashy-grey with a slight pinkish tinge, becoming browner on the lower flanks; thighs creamy-white; under tail-coverts white, mottled with ashy-grey centres to the feathers; under wing-coverts and axillaries ashy-white, with greyish bases; bill dark brown with a yellowish base to the lower mandible; feet and claws leaden-grey; iris pale yellow. Total length, 6·3 inches; culmen, 0·6; wing, 3·1; tail, 2·4; tarsus, 0·85.

Adult Female.—Rather browner than the male, and not so distinctly grey; the flanks more isabelline-buff; the breast washed with creamy-buff; the head not so distinctly black as in the male, and in many specimens scarcely to be distinguished from the back in colour. Total length, 5·7 inches; wing, 3·15

Young in Autumn Plumage.—After the first moult, the young birds are very like the old females, but have the quills externally browner; the head is a little greyer and more dusky than the back, and the black lores and ear-coverts are indicated by a dusky shade. The principal characteristic of the young bird is the colour of the under-parts, the throat being white with a pinkish tinge, the fore-neck and chest rosy isabelline, deepening into clear vinous on the sides of the body, flanks, and especially rich in colour on the under tail-coverts; axillaries vinous like the flanks; under wing-coverts white.

NOTE.—The large size of the Orphean Warbler is one of its chief characters when compared with that of the Whitethroats, as the wing is three inches in length, but it might possibly be confounded with the Blackcap, which sometimes equals it in length of wing. Like the latter species it has the first, or bastard, primary-quill rather long, equalling the length of the primary-coverts, or extending as much as 0·2 inch beyond them, and the second primary is equal to the fifth, whereas in the Blackcap it is a little longer than the sixth. The white throat, however, will always distinguish the Orphean Warbler; in the Blackcap, the throat is ashy-grey.

Range in Great Britain.—The two reported occurrences of this species in England are scarcely satisfactory for its recognition among British Birds, and the statements that the nest and eggs have been taken in this country are quite unreliable. Sir William Milner had in his collection a specimen said to have been shot near Wetherby, in Yorkshire, in July, 1848, but, notwithstanding that a pair of birds was stated to have been seen, the authority for the genuineness of the occurrence is not all that could be wished. The second instance of the capture of an Orphean Warbler is said to have taken place near London, when a young bird was caught at Holloway, in June, 1866, was kept alive by Sergeant-Major Hanley for nearly six months, and was identified as belonging to the present species by the late Mr. Edward Blyth. It would have been more satisfactory if the history of this specimen had been followed up, as is necessary in the cases of all birds which may be kept as cage-birds at any of our military stations in the Mediterranean, and, like the Calandra Lark, gain a footing in the list of "British" species. The occurrence of the present bird in England is the less likely to happen, when it is considered that no specimen has ever been recorded from the countries opposite to our own shores.

Range outside the British Islands.—The Orphean Warbler is principally a bird of the south of Europe, being found in all the Mediterranean countries as far east as Asia Minor and Palestine, though Mr. Seebohm says that the birds of these countries are intermediate between the west-European birds and the Indian Orphean Warbler (*Sylvia jerdoni*). It is a common bird in Spain and Portugal, and extends northward into France, breeding sparingly in the Brenne district, and more frequently in Potiou, while it also occurs as far as the Vosges and Luxembourg: it has also occurred at Heligoland. In Italy it is somewhat local, but is found plentifully in Greece. Its winter home appears to be North-eastern Africa, and it has also been met with in Senegambia.

Habits.—In these, says Mr. Howard Saunders, there is nothing particular to record as different from those of the other Warblers. Mr. Seebohm states that he was disappointed in the song, which is louder and harsher than that of the Blackcap, and its alarm-note is very loud, as loud, he says, as that of a Blackbird. Lord Lilford has given the following account of the bird in Spain: "I found it exceedingly common in the neighbourhood of Madrid and Aranjuez. In these localities I generally met with it frequenting the avenues of elm and deciduous bushes in the gardens and open country, as a rule avoiding thickly-wooded districts; in Andalucia, on the other hand, our bird appeared especially to frequent the pine-woods, and the willows that grow thickly along certain portions of the Guadalquivir. The nests that we found were placed at various heights, from five to twenty feet from the ground, often resting on the young growers from the trunks of the elms, and perhaps as often in the forks of willows, tamarisks, and olive-trees. The nest is very much more substantially built than that of the other Warblers of this family. The song of the bird, though more powerful than that of our Blackcap, cannot, in my opinion, be compared with it for melody or sweetness. In fact, I have always been puzzled to know why the name of 'Orpheus' should have been bestowed on this species."

Nest.—Generally placed, without any attempt at concealment, in the branch of a tree, at about four or five feet from the ground, or near the top of a bush, and found by Capt. Willoughby Verner in the summit of young cork-trees near Gibraltar, at a height of twelve feet. The nest, says Mr. Seebohm, is a tolerably substantial one, and deep, composed of dry grass and leafy stalks of plants. Inside it is built of finer grasses, and sparingly lined with thistle-down, or the flower of the cotton-grass.

Eggs.—From four to five in number. They look at first sight like large eggs of the Lesser Whitethroat, though there are some variations in the type of egg from those of the latter species. The ground-colour is white or greenish-white, and the spots vary from olive-brown to black, in the latter case being dotted over the egg. The underlying spots and blotches are violet-grey, but often pinkish-grey. As with many of the eggs of this group of Warblers, the grey blotches are very prominent, and sometimes overwhelm the fainter overlying spots. One type of egg has almost the appearance of a Pied Wagtail's, both the overlying and underlying dots being very small, and a little more clustered round the larger end. Axis, 0·75–0·8 inch; diam., 0·55–0·6. In Spain the Cuckoo is very partial to the nests of this Warbler, and lays eggs exactly like those of the birds it victimises (*cf.* Saunders, Man., p. 46).

THE BLACKCAP. SYLVIA ATRICAPILLA.

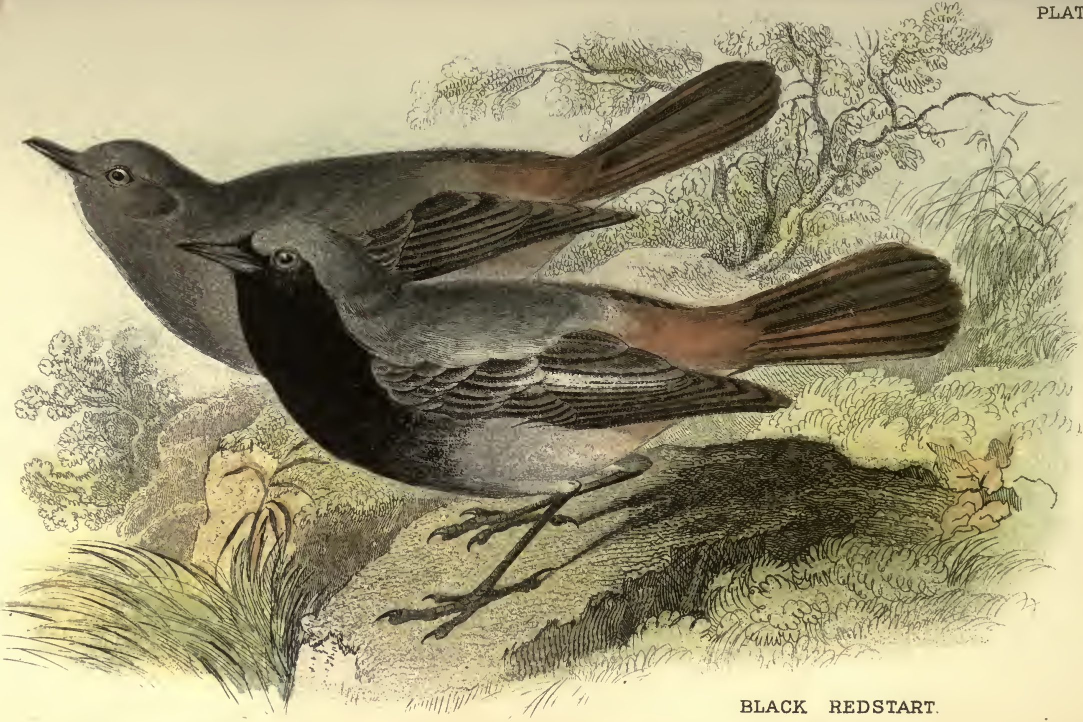
Motacilla atricapilla, Linn., S. N., i., p. 332 (1766).

Sylvia atricapilla, Macg., Br. B., ii., p. 339 (1839); Newt. ed. Yarr., i., p. 418 (1873); Dresser, B. Eur., ii., p. 421, pl. 66 (1875); Seebohm, Cat. B. Brit. Mus., v., p. 23 (1881); id. Hist. Br. B., i., p. 394 (1883); B. O. U. List Br. B., p. 12 (1883); Lilford, Col. Fig. Brit. B., pt. i. (1885); Saunders, Man., p. 47 (1889).

Adult Male.—General colour above light olive-brown, a little greyer towards the rump and on the upper tail-coverts; wing-coverts like the back; quills sepia-brown, edged with olive-brown, greyer on the primaries; tail-feathers sepia-brown, edged with ashy-grey; crown of head glossy black, extending as far as the nape and forming a cap; hind-neck and sides of head slaty-grey, like the ear-coverts and sides of the face and lores; eyelid whitish; throat, breast, and abdomen ashy-white, the fore-neck, chest, and sides of body light slaty-grey, becoming tinged with brown on the lower flanks, and darker brown on the thighs; under tail-coverts white with dusky ashy centres; axillaries and under wing-coverts ashy with a tinge of isabelline; quills dusky below, with an ashy lining; bill dark brown; feet and claws leaden grey; iris hazel. Total length, 5·8 inches; culmen, 0·45; wing, 2·95; tail, 2·25; tarsus, 0·8.

Adult Female.—Similar to the male, but distinguished by having the cap rufous or rusty-brown, the hind neck being grey as in the male. Total length, 5·5 inches; wing, 2·8.

PLATE XXIV



BLACK REDSTART.

Young.—Both males and females are alike in having the cap rusty-coloured, therein resembling the old female. The back is more olive-brown than in the old birds, and there is no grey on the neck, which is coloured like the back. There is considerable doubt as to the way in which the young male gains his first full black-headed plumage, and Mr. Seebohm mentions his having secured a specimen in Heligoland, on the 2nd of October, which had a black head, but with every feather edged with rusty-brown. Such specimens are not unfrequently shot in the winter quarters of the species, and if, as must undoubtedly be the case, the Blackcap, like other Warblers, goes through an entire spring moult, the blackish head would be worn through the first winter, and the black cap assumed in the following spring by a moult, or, as Naumann declares, by a partial change of feathers. This is, however, by no means the invariable method of passing from the young plumage to that of the adult, for there is in the collection of the British Museum, a young male caught at Lancing on the 13th of August, which is in full moult, and has nearly assumed the perfect black head of the adult, without any brown-tipped feathers. The birds which exhibit the last-named peculiarity may be those of later broods.

NOTE.—The black cap of the male, and the rufous cap of the female distinguish the Blackcap from all the other Warblers, except the Orphean Warbler, which also has a black head. As already stated the grey throat of the Blackcap will always distinguish it from that species. In the wing the fourth and fifth primary-quills are equal and longest, and the second primary is a little longer than the sixth; the first, or bastard, primary, extends about 0·15 inch beyond the primary coverts.

Range in Great Britain.—A summer visitor, found throughout England and Wales, but becoming rarer in Scotland, visiting, however, the northern parts and the Orkneys and Shetland Isles on the autumn migration, but not breeding, as a rule, beyond the Firths of Clyde and Forth. In Ireland it also nests, and appears to be more or less sparingly distributed.

Range outside the British Islands.—Pretty generally distributed throughout Europe, during the summer ranging north to 66° in Scandinavia, in Russia to 62°, and in the Ural Mountains to 57° N. lat. In the collection of Dr. Slovzow, at Omsk, is a specimen said to have been obtained in the neighbourhood, but, according to Mr. Seebohm, its westward range is the 70th degree of east longitude. It is found in the Caucasus and Western Persia, and winters in North-eastern Africa and Senegambia.

Habits.—The Blackcap arrives in this country at the end of April or early in May, and apparently begins at once to build its nest, as we have found hard-set eggs as early as the 12th of May. Its song, more sustained than that of the Nightingale, rivals, if it does not surpass, that of the latter bird's, and the song generally commences in the same way—first a few notes, sounding some distance off, and then bubbling forth into beautiful and sustained melody. Both male and female take turns at incubation, and Mr. Dixon says that the former even sings while sitting on the eggs. This we have never heard, but we have several times found the male bird sitting on the nest, and generally loth to quit his charge. When disturbed, the bird flits off suddenly and quietly, retiring into the bushes and scolding vehemently in the usual harsh voice of the Warblers. The female, on the other hand, will evince great anger, and often come close to the intruder, scolding and hissing. The birds, if often disturbed, will forsake the nest, even when the eggs are far advanced towards hatching, and will also not lay eggs in a nest if the latter be much disturbed by touching it. The food of the Blackcap consists chiefly of insects, but also of a few berries, and many observers believe that the latter constitute more of its food than insects. In the autumn they devour elderberries to a great extent, and on migration they even stop in the suburban districts of London, and may then be seen in small parties on the elder-bushes. The Blackcap undoubtedly remains sometimes in the warmer parts of Great Britain during the winter, being enabled to subsist by the abundance of berries.

Nest.—This is placed in various situations,—in brambles, in hedges, and small bushes, and in the branches of small trees in the undergrowth. We have also found it in the "growers" of an elm-tree in a dark, ever-green shrubbery. In the British Museum is a nest, found by ourselves, in Sussex, suspended in a privet-bush overhanging a ditch, at a very little height from the ground. The nest is a slightly-made, cup-shaped structure, consisting chiefly of dry grass, with a little moss, a few cobwebs, and a scanty lining of horsehair.

Eggs.—From four to six in number. There is great variation in the colours and markings. The most common type is olive-brown or dull white tinted with olive-brown, and then smudged, as it were, with darker olive all over the egg, and clouded with grey round the larger end. This type of egg has also some blackish-brown spots or blotches scattered promiscuously over the surface. A scarcer type has the ground-colour white, and the overlying spots and blotches are very faintly indicated, the underlying grey markings predominating. A very handsome egg is sometimes found, which is salmon-pink, streaked or spotted with underlying reddish-brown markings, with a spot or streak of blackish-brown scattered here and there. Axis, 0·75–0·85 inch; diam., 0·55–0·6. In the Canaries a curious egg is laid by the Blackcap, pale greenish-white, with a ring of tiny dark greenish dots round the larger end. Mr. Meade-Waldo procured several clutches of this form of egg.

THE GARDEN-WARBLER. SYLVIA SIMPLEX.

? *Motacilla salicaria*, Linn., S. N., i., p. 330 (1766).
Sylvia simplex, Lath., Gen. Syn. Suppl., i., p. 287 (1787).
Sylvia hortensis, Bechst.; Macg., Br. B., ii., p. 345 (1839); Seeb., Cat. B. Brit. Mus., v., p. 10 (1881); id. Hist. Br. B., p. 400 (1883); B. O. U. List Br. B., p. 13 (1883); Lilford, Col. Fig. Br. B., pt. ii. (1886); Saunders, Man., p. 49 (1889).
Sylvia salicaria, Newt. ed. Yarr., i., p. 414 (1873); Dresser, B. Eur., ii., p. 429, pl. 67 (1876).

Adult Male.—General colour above warm olive-brown, the wing-coverts like the back; quills dark brown, edged with olive-brown like the back, the secondaries slightly paler at the ends; tail-feathers brown, with olive-brown margins; the head like the back, with a slight shade of ashy-grey on the sides of the neck; lores and eyelids ashy-whitish; the ear-coverts pale olive-brown, lighter than the back; above the eye a faint streak of buff; throat, breast, and sides of body, ochreous-buff, deepening on the flanks and vent; the centre of the breast, abdomen, and under tail-coverts greyish-white, the latter with dusky centres; under wing-coverts and axillaries orange-buff; quills dusky below, ashy-whitish along the inner web; bill dark brown, the lower mandible pale at the base; feet and claws leaden-grey; iris hazel. Total length, 6 inches; culmen, 0·5; wing, 3·0; tail, 2·15; tarsus, 0·75.

Adult Female.—Similar to the male in plumage. Total length, 6 inches; wing, 3·0.

In **Autumn Plumage** the upper parts incline to russet-brown rather than to olive-brown, and the buff of the under surface of the body is deeper in tint and more reddish, the white of the breast being very pure.

Young Birds resemble the autumn plumage of the adults.

NOTE.—The Garden-Warbler is very easily recognised by its sober coloration, the buff colour of the throat and chest distinguishing it from those of other species, which have the head coloured like the back. It has the same shaped wing as the Whitethroat, the first, or bastard, primary being very small, and falling short of the primary-coverts by 0·1 or 0·2 inch. The second primary-quill is nearly equal to the third. In shape and bulk the Garden Warbler is about the same as the Blackcap, but the black or rufous caps always serve to distinguish the latter.

Range in Great Britain.—A summer visitor to most parts of England, more locally distributed than the Blackcap, though in the Solway district of Scotland Mr. R. Service says that it is more abundant than the last-named species. Its breeding range does not extend beyond Pembrokeshire and Breconshire, in Wales, nor is the bird known to breed in the west of Cornwall. In Scotland it seems to be less generally distributed, though recorded from Banffshire and from the Shetlands during the autumn migration. In Ireland it is a rare and local bird, and has been recorded as breeding only in the counties of Antrim, Fermanagh, and Tipperary, and possibly in Cork.

Range outside the British Islands.—Found everywhere throughout Europe, nesting as far north as 70° N. lat. in Scandinavia, and to about 65° in Russia, but it does not extend east beyond 85° E. long., according to Mr. Seebohm; its most easterly record being apparently the vicinity of Omsk, in Siberia, in the neighbourhood of which town specimens are said to have been procured by Professor Slovzow. In the Ural Mountains its range is given as 50° N. lat. It occurs in the Caucasus and North-western Persia, and breeds in Palestine, according to Canon Tristram. In winter it migrates to Africa, as it has been found in Damara Land, the Transvaal, and the eastern Cape Colony. The route taken by the species is mostly by the Nile Valley and through Equatorial Africa, as it has been procured by Emin Pasha at Tingasi, and has also been obtained in Nyassa Land; it occurs, moreover, on the Gold Coast.

Habits.—The Garden-Warbler is a somewhat later arrival than the bulk of our summer birds, only reaching our islands in the beginning of May, and leaving again in September. Its unobtrusive plumage and retiring habits render it much less observable than the Blackcap, which in form and habits it so closely resembles. Its song is scarcely inferior to that of the last-named species, and, like the Blackcap and the Nightingale, it seldom sings in the open or from a perch, but generally from the thick undergrowth, in which it loves to skulk. Sometimes, however, it may be seen to fly out into the air in pursuit of an insect, of which its food almost entirely consists, though it also devours berries and fruits. This is certainly the case in autumn, when the birds may often be seen on elder-bushes devouring the berries, in company with Blackcaps. At other times of the year, however, these two species do not consort together, but, on the contrary, seem to occupy different localities, so that where the Blackcaps are common there are few Garden-Warblers, and *vice versâ*.

Nest.—Generally placed near the ground in some secluded spot, and usually so well concealed that neither the eggs nor the sitting bird can be seen. Sometimes it is suspended in nettles, like that of the Whitethroat, and at other times among the thin twigs of the briars which are overhung with foliage, so as to conceal the nest. The latter is very slightly constructed of dry grasses and a few small rootlets, with a little moss or a few cobwebs, and lined with horsehair.

Eggs.—Four or five in number, more rarely six. In general appearance the eggs are just like those of the Blackcap, but, as a rule, the markings appear to be bolder and coarser than is usual in that species. The red type, which is such a beautiful variety in the eggs of the Blackcap, is seldom found, and there is only a single specimen of a red egg in the British Museum, which was taken by Mr. Gould at Taplow, and is, therefore, doubtless authentic. The ground-colour is white, or stone-colour, with plentiful spots and blotches of greenish-brown, the underlying grey blotches being generally subdued, but in some cases prominent and clouding the larger end, though in some rare instances the markings are very few and scattered. Axis, 0·7–0·85 inch; diam, 0·55–0·6.

THE FURZE-WARBLERS. GENUS MELIZOPHILUS.

Melizophilus, Leach, Syst. Cat. Mamm. and Birds, Brit. Mus., p. 25 (1816).

Of the genus *Melizophilus*, two species are known, the English *M. undatus*, and the Sardinian Warbler, *M. sardus*. Both of these birds resemble Whitethroats in form, especially the species of *Sylvia* of Southern Europe, such as *S. subalpina*, and they lay eggs of a Whitethroat type, but they may conveniently be separated from the genus *Sylvia* on account of their longer tail, which exceeds the wing in length.

THE DARTFORD WARBLER. MELIZOPHILUS UNDATUS.

Motacilla undata, Bodd, Tabl., pl. Enl., p. 40 (1783).
Melizophilus provincialis, Macg., Br. B. ii., p. 383 (1839); Lilford, Col. Fig. Brit. B., pt. iv. (1887).
Melizophilus undatus, Newt. ed. Yarr., i., p. 398 (1873); Dresser, B. Eur., ii., p. 441, pl. 69 (1873); B. O. U. List Br. B., p. 14 (1883).
Sylvia provincialis, Seeb., Cat. B. Brit. Mus., v., p. 31 (1881); id. Br. B., i., p. 414 (1883).
Sylvia undata, Saunders, Man., p. 53 (1889).

Adult Male.—General colour above dark slaty-grey washed with brown; the crown, sides of the face and sides of neck slaty-grey like the back, this colour also extending on to the sides of the upper breast; wing-coverts like the back; the quills sepia-brown, edged with lighter brown, rufescent on the margins of the secondaries; tail-feathers blackish, edged with slaty-grey, the outer feather white on the outer web, and edged with white round the tip of the inner web; under surface of body vinous chestnut, the abdomen pure white; the feathers of the throat and fore-neck tipped with hoary white, these tips forming a faint moustachial streak along the cheeks; under tail-coverts ashy grey, with hoary margins; under wing-coverts and axillaries dark slaty-grey; bill dark brown, with a pale base to the lower mandible; feet and claws pale brown; iris orange yellow. Total length, 5 inches; culmen, 0·5; wing, 2·0; tail, 2·4; tarsus, 0·75.

Adult Female.—Similar to the male in colour, but paler below, inclining more to cinnamon-rufous than chestnut. Total length, 5 inches; wing, 2·0.

Winter Plumage.—Much darker than in summer, being more of a sooty brown, the hoary white tips to the feathers of the throat more distinct, these wearing off a good deal during the breeding season.

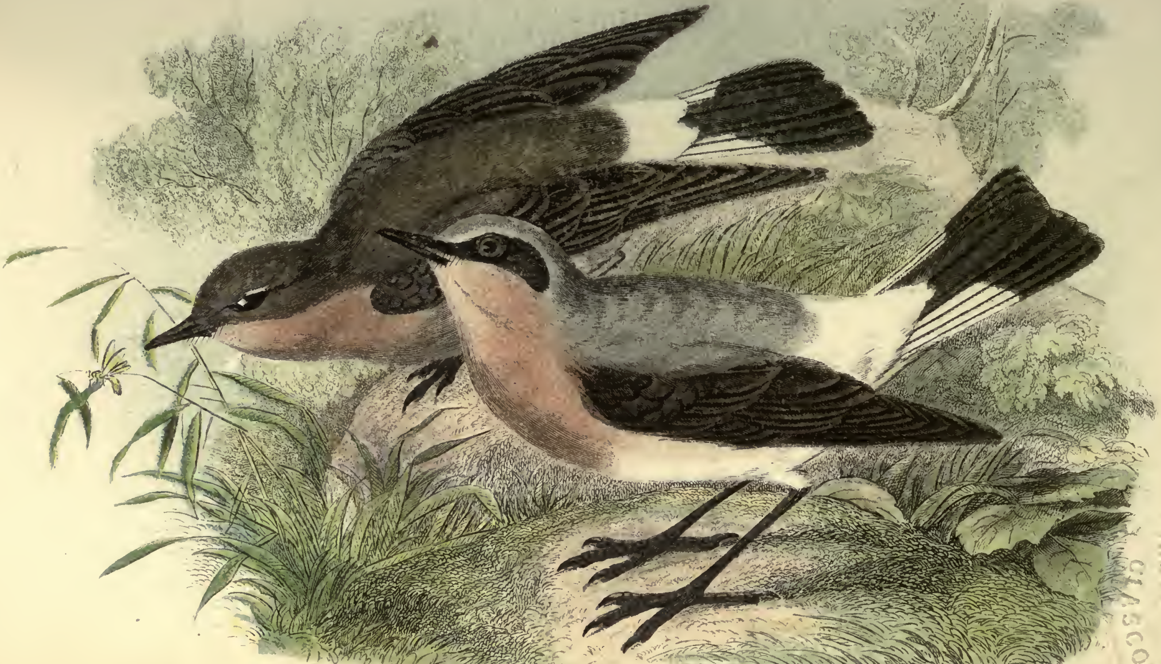
Young.—Dusky chocolate-brown above, the edges of the wing-coverts and quills more rufous-brown; under surface of body pale tawny buff, the sides and flanks being sooty brown, the throat clearer tawny buff.

Range in Great Britain.—A resident bird in the southern counties, having been known to breed in nearly every one of them from Kent to Cornwall, and it is even said to occur in the midlands, its most northern breeding record being one on Mr. Dixon's sole authority in the neighbourhood of Sheffield. As Mr. Howard Saunders very properly says, it is such a skulking bird that it may very easily be overlooked even by a practised observer. In many parts of the south of England it has become much rarer of late years, having been apparently extinguished by the severe and prolonged cold of some recent winters, such as that of 1881.

Range outside the British Islands.—The Dartford Warbler may be said to be a bird principally of the Mediterranean, whence it extends into France. It is common in most parts of Spain and Portugal, as well as in Southern France, but it does not appear to be resident in any part of Europe east of Italy, though it has been recorded from Palestine and Lower Egypt. In the Balearic Islands, as well as in Sardinia and Corsica, and also in Liguria its place is taken by the Sardinian Warbler, *Melizophilus sardus.* It appears to be resident in most of the countries which it inhabits, but must be, to a certain extent, migratory in some parts of its range, especially as it is known to ascend the mountains in Southern Europe for the purpose of nesting, and to descend to the low country in winter.

Habits.—The Dartford Warbler, wherever found, seems in England to be an inhabitant of the furze-covered districts, at least during the breeding season, and it is only in the winter that it may be found in such places as turnip-fields or in the vicinity of the coast. It is pronounced by every observer to be a bird of feeble flight, and it is, therefore, curious to note that on two occasions specimens have been procured in Heligoland. Mr. Howard Saunders says that in its habits it is a restless little bird, flitting from the top of one furze-bush to another, with a quiet and undulating flight, alighting in a very abrupt manner as if the action were the result of an afterthought, the tail being spread for an instant as if to aid the bird in an effort to retain its balance. On the wing the bird looks very dark, in fact, like a black, long-tailed Wren. The note which he most often heard uttered was a *pit-it-chou*, whence the French name, "Pitchou"; but he says that it has a scolding note, *cha-cha*, when the bird is irritated. Mr. Seebohm gives the following note on the habits of the species as observed by him in winter near Biarritz, where the birds were frequenting the reeds on the banks of a small lake. "The first sight I had of one was that of a little dark bird with a fan-like tail suddenly appearing amongst the reeds, crossing a small patch where they had been cut down, and as suddenly and silently disappearing amongst the reeds on the opposite side. Occasionally, as we walked on the bank of the lake, we heard a loud, clear, melodious *pitch-oo* repeated once or twice amongst the reeds. The note was so musical that for a moment one might imagine that a Nightingale was beginning to strike up a tune. Now and then we saw the bird appear for a moment above the reeds, as if thrown up by a battledore; but it dropped down again and disappeared as suddenly. We have rarely seen so skulking a bird. Once only it flew up from the reeds and perched in a willow near a pair of furze-bushes. Like most other Warblers, this bird is very active, scarcely resting for a moment, except when warbling its hurried little song from the top of a furze-bush. It flits up the bush,

PLATE XXV.



WHEATEAR.

BAILLIE'S INSTITUTION GLASGOW

dodging in and out the side branches in search of insects, perching for a moment on the topmost spray; but before you have time to get your binocular on to the bird, the latter catches sight of your movement, and drops down into the furze as if shot."

Nest.—This is a very neatly constructed cup, rather deep, and more strongly built to outward appearance than that of most Warblers. It is made of fine grass-stalks, very neatly intertwined and supported by a little moss and wool, with the grass-stalks sticking out in every direction. The inner lining is of finer grass-stems with a little horsehair.

Eggs.—Four or five in number. The markings partake of the character of the Whitethroat's eggs, but those of the Dartford Warbler are more regularly and thickly clouded with spots. The general type of egg has the ground-colour greenish-white, almost hidden by spots of greenish-brown, thickly sprinkled all over the egg, though in some cases clouding the larger end. The underlying grey markings are also distinct. In the lighter type of egg the ground-colour is greenish-white, spotted with greenish-brown all over the egg, but more thickly at the larger end, where the grey underlying markings are distinct. Axis, 0·7–0·75 inch; diam., 0·5.

THE RUFOUS WARBLERS. GENUS AËDON

Aëdon, Boie, Isis, 1826, p. 972.

Type, *A. galactodes* (Temm.).

The Rufous Warblers, formerly named, by a curious misapprehension of the habits of the birds, the Rufous "Sedge-Warblers," are two in number, and they are aptly called by Salvadori the Nightingale of Africa and the Nightingale of the Levant. The first is a bird of the Mediterranean countries, while the second, *Aëdon familiaris*, is the Eastern representative of the genus, and instead of migrating north and south like *A. galactodes*, its movements are east and west, as it is said to occur in Italy, which brings its range across that of *A. galactodes*. Count Salvadori, however, does not regard its occurrence in Italy as completely proved.

The Rufous Warblers are both species of somewhat large size, They have sometimes been placed with the True Warblers in the genus *Sylvia*, but they are totally different in colour from the members of that genus, are inhabitants of dry countries, and have much longer feet than is usual in the genus *Sylvia;* they also have the rictal bristles, according to Mr. E. W. Oates, placed in a horizontal row, without any supplementary bristles, as in the above-named genus.

THE RUFOUS WARBLER. AËDON GALACTODES.

Aëdon galactodes (Temm.), Newt. ed. Yarr., i., p. 355 (1873); Dresser, B. Eur., ii., p. 547, pl. 85 (1874); B. O. U. List Br. B., p. 18 (1883); Lilford, Col. Fig. Brit. B., pt. xi. (1889); Saunders, Man., p. 67 (1889).

Sylvia galactodes, Seeb., Cat. B. Brit. Mus., v., p. 34 (1881); id. Br. B., i., p. 418 (1883).

Adult Male.—General colour above light cinnamon-rufous, the whole of the upper surface being uniform, but the rufous colour deepening towards the rump and upper tail-coverts, which incline to darker cinnamon-rufous or light chestnut; the four centre tail-feathers are not tipped with white, but have a blackish-brown spot at the end, reduced to a small shaft-spot on the two middle feathers; all the other tail-feathers with a broad white spot at the ends, increasing in size on the outer ones, and having a large, subterminal spot of black; lesser and median wing-coverts like the back, but inclining to whity-brown on their edges; the greater coverts dusky, inclining to rufous externally and to whity-brown on the margins; primary coverts and quills dusky-brown, edged with rufous like the back, the secondaries fringed with whitish round their ends; head like the back, with a creamy buff eyebrow; a dusky streak from the lores through the eye; sides of face sandy-buff, the ear-coverts a little browner; a faint moustachial line of dusky brown; cheeks and under surface of body sandy-buff, inclining to creamy-white on the throat, breast, abdomen, and under tail-coverts; flanks washed with cinnamon, as also the under wing-coverts; quill-lining rufous; bill brown, the lower mandible yellowish horn-colour; feet and claws brown; iris hazel. Total length, 6·5 inches; culmen, 6·65; wing, 3·45; tail, 2·8; tarsus, 1·1.

Adult Female.—Similar in colour to the male. Total length, 6·5 inches; wing, 3·4.

Range in Great Britain.—A rare and accidental visitor from the south, having occurred on three occasions only, and always in the autumn. One was shot by the late Mr. Swaysland, in September, 1854, near Brighton; a second specimen, now in the British Museum, was procured in a half-starved condition, and without its tail, at the Start, in Devonshire, by Mr. W. D. Llewellyn, in September, 1869; while the third instance occurred near Slapton, in Devonshire, in October, 1876, and is vouched for by a well-known naturalist, Mr. H. Nicholls.

Range outside the British Islands.—The Rufous Warbler is found in most of the Mediterranean countries from Morocco to Palestine, and it winters to the southward in Abyssinia. In summer it visits the southern parts of Spain and Portugal, and, more rarely, Italy. It is also found in Palestine in summer as far as Beyrout, but to the north of the Lebanon only the Grey-backed Warbler, *A. familiaris*, occurs, and this species takes the place of *A. galactodes,* from Greece, eastwards through Asia Minor and the Caucasus to Turkestan, wintering in N.W. India and probably in Arabia, as it is known to extend to Eastern Africa.

Habits.—In some works this species is described as a very wary bird, while in others its tameness is referred to as remarkable. Mr. Dixon, in Algeria, had the greatest difficulty in procuring a specimen, while Canon Tristram speaks of it as "seen everywhere" in Palestine, "on upland and lowland alike, expanding, jerking, and fanning its tail, with its conspicuous white bar, on the bare fig-trees, among olives, on the top of any little shrub, or on the pathway in front of the horseman, hopping fearlessly on at his close approach." In Southern Spain, according to Mr. Howard Saunders, it is not at all shy, until it becomes conscious of being watched and followed; it is very lively in its habits, constantly flirting its tail, whence the Spanish name of "Alza-cola" and "Alza-rabo."

Nest.—Mr. Osbert Salvin has given the following account of the birds, as observed by him in Algeria in 1858: "Near Ain Djendeli I used frequently to notice the present species about the trees that overhung the dry, stony watercourses that run from the hills into the plain beneath. We never found a nest, however, in one of the above-mentioned places; and it would seem that the bird prefers a moister soil for its breeding haunts, such as is afforded by the lowlands near Ain Djendeli, where the tamarisk-trees grow on the banks of the Chemora and the small Ain or spring. The nest we found usually placed conspicuously in the fork or on a branch of one of these trees, and with apparently no attempt at concealment. The heights at which the structure is placed vary from one to six feet from the ground. In one instance I found a nest among the roots of a tree in a bank-side, in a place where one would have expected in England to have found the nest of a Robin. The materials employed are the dead shoots of the tamarisk, which form the outside—the inside and the lining being usually Coot's or Duck's feathers, mingled with wool or camel's-hair; and, in nine cases out of ten, a small piece of serpent's skin is loosely placed in the bottom of the nest." It is curious that the presence of this piece of snake-skin is also mentioned by Mr. Howard Saunders, Canon Tristram, as well as by Mr. Seebohm, who found it in the nests of *A. familiaris* in Greece, where the natives declared it was woven by the birds into the nest as a charm, to prevent natives from sucking their eggs.

Eggs.—Three to five in number. The ground-colour varies from dull white to bluish-grey, profusely marked with overlying streaks and spots or blotches of reddish-brown, being more densely clustered round the larger end, and with underlying spots of violet-grey; one type is of a pale blue colour with tiny spots of reddish-brown uniformly scattered all over the egg. Axis, 0·85–0·95 inch; diam., 0·65–0·7.

THE WILLOW-WARBLERS. GENUS PHYLLOSCOPUS.

Phylloscopus, Boie, Isis., 1826, p. 972.

Type, *P. sibilator* (Beehst.).

The members of the genus *Phylloscopus* are small birds of delicate form and colour, the principal tints of the latter being green and yellow. Four species of the genus occur in England, three as breeding birds from the south, and one as an accidental visitor from the far east. The bill is somewhat like that of some of the Flycatchers, which these little Warblers to a certain extent resemble in their habits. The bill is beset with small rictal bristles, and there are some supplementary bristles in front of the rictal series. The tail is slightly forked, and consists of twelve tail-feathers. The axillaries and under wing-coverts are yellow, a character which will distinguish them from all the other English Warblers.

THE WOOD-WARBLER. PHYLLOSCOPUS SIBILATOR.

Motacilla sibilatrix, Bechst., Naturg., Deutschl., iv., p. 688 (1795).
Phyllopneuste sylvicola, Macg., Br. B., ii., p. 364 (1839).
Phylloscopus sibilatrix, Newt. ed. Yarr., i., p. 427 (1873); Dresser, B. Eur., ii., p. 497, pl. 77 (1876); Seeb., Cat. B. Brit. Mus., v., p. 54 (1881); id. Br. B., p. 436 (1883); B. O. U. List. Br. B. p. 17 (1883); Lilford, Col. Fig. Brit. B., pt. iii. (1885); Saunders, Man., p. 65 (1889).
Phylloscopus sibilator, Salvad. Elench. Ucc. Ital., p. 133 (1886).

Adult Male.—General colour above yellowish-green, rather clearer on the head and rump; wing-coverts dusky-brown, edged with yellowish-green, inclining to paler yellow towards the ends of the greater series; primary-coverts and quills dusky-brown, edged with yellowish-green, more broadly on the inner secondaries, which are fringed with whitish at their ends, a small white fringe being also present at the tip of the primary-quills; tail-feathers dusky-brown, edged with yellowish-green and narrowly fringed with white at the ends; sides of face clearer yellow; a very broad eyebrow of sulphur-yellow extending from the base of the forehead to above the ear-coverts, and followed by a dusky streak through the eye from the lores to the upper margin of the ear-coverts; under surface of body white, the sides ashy-grey washed with sulphur-yellow; the throat clear sulphur-yellow, followed by a faint greyish tinge on the breast; axillaries pale yellow; under wing-coverts whitish, tinged with yellow; bill brown, the base of the lower mandible pale horn-colour; feet and claws light brown; iris hazel. Total length, 4·8 inches; culmen, 0·6; wing, 3·1; tail, 2·0; tarsus, 0·7.

Adult Female.—Similar to the male, but rather greener and the throat not so pure yellow. Total length, 4·7 inches; wing, 3·0.

Young.—Like the adults, but greener, and the yellow of the throat more diffused and extending over the fore-neck and upper breast.

Winter Plumage.—Does not differ appreciably from the summer plumage.

NOTE.—The Wood-Warbler is the largest of the three species which breed in Great Britain, and is brighter in colour than the Willow-Warbler or the Chiffchaff, neither of which have such a clear yellow eyebrow or throat, the latter contrasting markedly with the white breast and abdomen. The first, or bastard, primary is shorter than the primary-coverts, and measures only 0·3 to 0·4 inch. The second primary is always longer than the fifth.

Range in Great Britain.—A summer visitor to most parts of England and Wales, and also found over the greater part of Scotland, having been seen in Caithness and in the Outer Hebrides, on North Uist. The most northerly breeding place yet recorded in our islands is the south-east of Sutherlandshire, where it is said to nest by Messrs. Buckley and Harvie-Brown. In Ireland it is only known as a rare visitor, but doubtless breeds in certain parts of the country.

Range outside the British Islands.—Found over the greater part of Europe in summer, but, to a certain extent, local in its distribution. Thus it has never been found in Norway, but occurs in Sweden up to the vicinity of Upsala, is common in the Baltic Provinces, and extends to Finland, and even to the neighbourhood of Archangel. Its eastern limit in Russia appears to be the district of Kazan, but further south it has been found in Lenkoran. In Turkey it also breeds, but is only a migrant in Greece, Asia Minor, and Palestine. In Italy it nests on the mountains of the northern and central provinces, but is principally known as a spring migrant to that country. The same may be said regarding Spain, but in Portugal the species is almost unknown, though Mr. Tait says "there is one in the Lisbon Museum, obtained at Barranhos" (Ibis, 1887, p. 92). It nests sparingly in North-eastern Africa. The winter home of the Wood-Warbler appears to be in North-eastern Africa, but it also winters in Western Africa, having been procured at the Gold Coast by Captain Shelley and Mr. T. E. Buckley.

Habits.—The Wood-Warbler is one of the most beautiful little birds which visit England in the spring. It appears about the end of April, and its presence is at once made known by its cheery song. Its name of "Wood-Warbler," or "Wood-Wren," is in every way appropriate, for it is essentially a bird of the woods, and it is just when the latter are putting forth their fresh green leaves that the Wood-Warbler appears in our midst. By listening for the trill of the little songster he can soon be discovered, sitting probably for an instant on a bough at some distance from the ground, and then flying off to the slender twigs to examine the leaves above and below in search of insects. Then he will sometimes fly out from the tree and catch a passing insect, after the manner of a Flycatcher; and, returning to its perch, break out into song again. When the birds first arrive, several are to be heard in the same wood, answering each other's song, and trilling joyously. Sometimes the bird begins to sing in mid-air as he is flying from one tree to another, and finishes his song as he lights on his new perch, and in every movement the Wood-Warbler is an embodiment of grace and elegance, while its easy flight often resembles that of a Butterfly. The song is imitated by Mr. Seebohm by the following words, *chit-chit chit-chit chitre tr-tr-tr-tr-tre;* this really gives a very good idea of the opening note, which is pronounced as if the bird were bubbling over with the idea of a song and could not get it out quickly enough; but the mellowness of the final trill cannot be produced by any form of words, and must be heard to be appreciated and remembered. The female is a very shy bird, and is not often seen; but the neighbourhood of the nest is often pointed out by the singing of the male bird, who warbles continually near the spot until the hatching of the eggs gives him a more important occupation. But even if the vicinity of the nest be discovered, it is by no means easy to find the nest itself, for it is always well concealed on the ground hidden among the grass, and scarcely to be distinguished from the surroundings.

Nest.—Partly domed over, and made of grass, with a few dead leaves or a little moss, but is lined with horsehair, not with feathers, as in the allied species of Warbler.

Eggs.—From five to seven. Ground-colour white, thickly dotted, and in some instances blotched with purplish-brown, and having tolerably distinct underlying spots of violet-grey. In some clutches the purplish-brown markings are so thickly collected together as to cloud the larger end of the egg, and there is very seldom an attempt at a ring round the latter. Axis, 0·6–0·7 inch; diam., 0·5–0·56.

THE WILLOW-WARBLER. PHYLLOSCOPUS TROCHILUS.

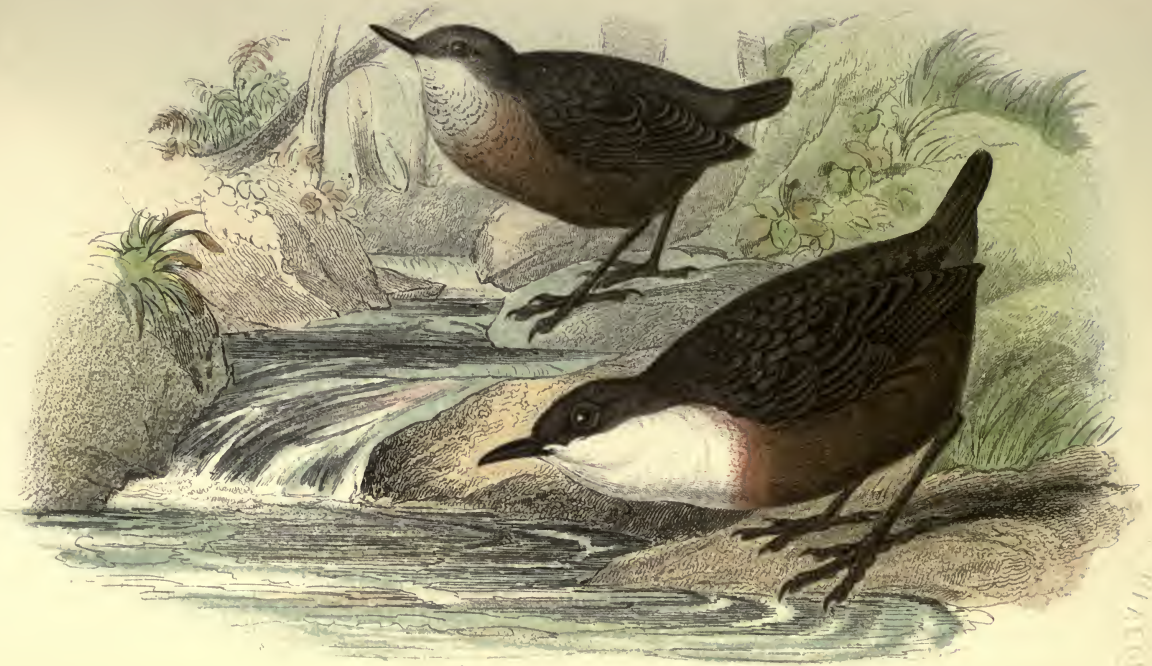
Motacilla trochilus, Linn., Syst. Nat., i., p. 338 (1766).
Phyllopneuste trochilus, Macg., Br. B., ii., p. 371 (1839).
Phylloscopus trochilus, Newt. ed. Yarr., i., p. 432 (1873); Dresser, B. Eur., ii., p. 491, pl. 76, fig. 2 (1879); Seeb., Cat. B. Brit. Mus., v., p. 56 (1881); id. Hist. Br. B., i., p. 43 (1883); B. O. U. List Br. B., p. 16 (1883); Lilford, Col. Fig. Br. B., pt. v. (1887); Saunders, Man., p. 63 (1889).

Adult Male.—General colour above olive-greenish, somewhat clearer on the rump; the head like the back; lesser wing-coverts like the back, the rest of the wing-coverts and quills dusky brown, edged with the same colour as the back; tail dusky brown, externally with narrow greenish margins, and ashy-white edges to the inner webs, with, in freshly moulted specimens, a narrow whitish margin extending to the tips of the feathers; head like the back, with a tolerably distinct eyebrow of dull sulphur-yellow; eyelid also yellow; lores and sides of face dull olive-greenish; sides of neck like the back; throat and fore-neck ashy-whitish, with streaks of pale sulphur-yellow, with which the feathers are margined; breast and abdomen purer white, the under tail-coverts also whitish, but washed with yellow near the vent; the flanks inclining to olive buff, and slightly washed with yellow; thighs yellow; under wing-coverts and axillaries sulphur-yellow, as also the edge of the wing; quills dusky below, ashy-whitish along the inner margin; bill dark brown, with a slightly paler base to the lower mandible; feet and claws brown; iris hazel. Total length, 4·8 inches; culmen, 0·5; wing, 2·7; tail, 2·1; tarsus, 0·8.

Adult Female.—Similar to the male. Total length, 4·6 inches; wing, 2·45.

Young.—After the autumn moult the young birds are much

PLATE XXVI.



DIPPER.

more olive-brown above than the adults, and entirely yellow below. Before the first autumn moult the colour is a dull olive-brown above, the throat and breast dingy ashy-brown; the abdomen white, with a wash of sulphur-yellow in the middle; the feet very pale.

Winter Plumage.—The adults in winter have the plumage very like that of the spring, but rather more yellow.

NOTE.—The Willow-Warbler is easily distinguished from the Wood-Warbler by its smaller size and duller coloration. The third and fourth primaries are the longest quills, and the second primary is intermediate between the fifth and sixth. It is with the Chiffchaff that the Willow-Warbler is often confounded, but, as will be seen below, the wing of the Chiffchaff is much more rounded, and the proportion of the quills is quite different. In the Willow-Warbler the wing is much more pointed, as befits a bird of such extended migration. The feet are also much paler in the Willow-Warbler than in the Chiffchaff.

Range in Great Britain.—A summer visitor to nearly every portion of the British Islands, though somewhat local in the west of England and parts of Wales. It is only known as a straggler in the Orkneys and Shetland Isles. It arrives in England about the beginning of April, and departs in September.

Range outside the British Islands.—Occurs in nearly every part of Europe, but in many countries only on migration. Its breeding range extends to the extreme north of Scandinavia, and in the valleys of the Petchora and the Yenesei Mr. Seebohm found the species up to 70° N. lat. In the northern countries of Europe it breeds, but chiefly in the mountains, and is decidedly local, while for its eastern range Dr. Pleske gives ample data to show that it nests in most of the provinces of Russia, and even in the Caucasus and the isolated woods of the Kirghis-steppes. The principal winter home of the Willow-Warbler is Africa, where it is found not only on the west coast but also in South Africa down to the Cape Colony itself. It occurs in most collections from the Transvaal, and it is also met with in Damara Land during the cold season in the north. It is even said to winter in some of the Mediterranean countries, and certainly does so in the oases of the Sahara.

Habits.—Although the Willow-Warbler is frequently noticed in the woods, especially on its first arrival in spring, it is by no means so exclusively a denizen of them as the Wood-Warbler.

It is equally to be found in gardens and orchards, and even in the parks and shrubberies of towns. In the suburbs of London it is a common visitor during the spring and autumn migration, and is to be seen at the last-named time of year feeding with the Blackcaps on the elderberries. The song of the Willow-Warbler is more feeble than that of the Wood-Warbler, but is of the same trilling character, though the song is not so prolonged and is in a descending scale. After the breeding season and the autumnal moult has been accomplished, the bird recommences to sing, but as a rule at that season of the year it is generally silent, uttering only its "whit"-like call-note, and searching diligently for food, not only in the inland woods, but more particularly in the trees by the riverside. It is at this time of year that it more especially merits the name of "Willow"-Warbler, for it is a very common thing in the Thames Valley to see little parties of these birds feeding among the willows in August.

Nest.—As with the Wood-Warbler, the nest of this species is placed on the ground, and is very difficult to discover. With both of them the best way is to beat the ground with a stick, and so drive out the hen-bird from the nest. Not only is the entrance to the nest very small, but the materials of which it is composed greatly assimilate to the surroundings and aid in its concealment. The nest is half-domed, the rim of the entrance being built at an angle of about 45°.

A nest taken in Sussex is now before us. It is neatly constructed when taken away from its ragged surroundings, and is composed principally of dry grass-stems, with a good deal of moss near the top, and a few dead leaves interwoven; on the outside are also a few feathers, among them one from the breast of a Cuckoo. Inside the nest is scantily lined with feathers.

Eggs.—Five to eight in number. Ground-colour white, or creamy-white, either numerously sprinkled with reddish dots, or having the spots larger, more scattered, and sometimes in the form of blotches or tiny streaks, generally at the larger end of the egg. The shape of the egg varies considerably, being sometimes elongated, and at other times almost round, but the spots are always reddish. Axis, 0·6–0·7 inch; diam., 0·45–0·5.

The late Mr. Swaysland, of Brighton, used to affirm that there was a second species of Willow-Warbler in England, which built a nest off the ground, sometimes at a height of a few feet, had a different song, and laid a different coloured egg. At our request he procured us a nest of this "intermediate" Willow-Warbler, as he called it. The nest was taken from the rubbish and the runners near the base of a tree. It is similarly constructed to the one described, but has perhaps not quite so many stems of dead grass. The eggs are sprinkled all over with reddish spots, belonging to the type first-mentioned above, while those which he forwarded as the eggs of the true Willow-Warbler are more sparsely dotted with darker and larger spots, as in the second type of egg mentioned in the description. We have not been able to detect any difference in the colour of the birds which Mr. Swaysland sent as belonging to the two forms of Willow-Warbler, but the subject is worth the attention of some of our field-naturalists; though the explanation is probably that, like the Chiffchaff, the Willow-Warbler not unfrequently builds its nest away from the ground.

THE CHIFFCHAFF. PHYLLOSCOPUS MINOR.

Sylvia rufa (nec. Bodd.), Bechst., Orn. Taschenb., i., p. 188 (1802).

Trochilus minor, Forst., Syn. Cat. Br. B., p. 54 (1817).

Phyllopneuste hippolais (nec. L.), Macg., Br. B., 11, p. 379 (1839).

Phylloscopus collybita (V.), Newt. ed. Yarr., i., p. 437 (1873); Dresser, B. Eur., p. 488, pl. 76 (1879).

Phylloscopus rufus (Bechst.), Seeb., Cat. B. Brit. Mus., x., p. 60 (1881); id. Br. B., i., p. 435 (1883); B. O. U. List Br. B., p. 16 (1883); Saunders, Man., p. 61 (1889).

Phylloscopus collybista, Salvad., Elench. Ucc. Ital. p. 134 (1886).

Phylloscopus minor, Lilford, Col. Fig., Br. B., pt. v. (1887).

Adult Male.—General colour above dull olive-green, slightly clearer olive on the rump; wing-coverts and quills dusky brown, edged with olive-green like the back; tail-feathers also dusky brown, very slightly margined with olive; crown of head uniform with the back; a narrow eyebrow of greyish-white, slightly tinged with yellow, extending from the base of the bill to just behind the eye; sides of face dingy olive, with a dusky line through the eye; under surface of body dingy olive-yellow, whiter on the centre of the breast, abdomen, and under tail-coverts, the latter washed with olive-yellow; under wing-coverts and axillaries rather brighter greenish-yellow; quills dusky below, ashy-whitish along the edge of the inner webs; bill dark brown, the lower mandible slightly paler; feet and claws dark brown, almost black; iris hazel. Total length, 4·6 inches; culmen, 0·5; wing, 2·8; tail, 1·9; tarsus, 0·8.

Adult Female.—Similar to the male. Total length, 4·5 inches; wing, 2·4.

Autumn Plumage.—Much more fulvescent in tint than in summer, the eyebrow being fulvous, and the throat, chest, and sides of the body also of this colour, with a few yellow streaks on the throat and breast.

Young.—Similar to the adults, but entirely olive-yellow underneath, the under wing-coverts and axillaries, and the edge of the wings, being brighter yellow.

NOTE.—The Chiffchaff can be easily recognised by the shape of the wing, which is much more rounded than in the Willow-Warbler or Wood-Warbler, and has the second primary, *i.e.*, the first *long* primary in the wing, about equal in length to the sixth. The general colour is more dingy, and the size is rather smaller than that of the Willow-Warbler. Both in life and in a prepared skin the feet are much darker, appearing black in the skin of a Chiffchaff, and brown in a Willow-Warbler. This character and that of the more rounded wing of the Chiffchaff render the two birds easily recognisable one from the other.

Range in Great Britain.—An early summer visitor, arriving in the middle of March, and leaving in September and October. Chiffchaffs occasionally remain in England during the winter, and Mr. Robert Read has presented to the British Museum a specimen obtained by him in Somersetshire on the 27th of December, 1892. Mr. Howard Saunders says that the bird winters mostly in the south-western counties, when it elects to stay in England during the cold weather. In all parts of Great Britain it is a rarer bird than the Willow-Warbler, but is commoner in some districts than others, being rare or local in Norfolk, Lancashire, and in the north-west of Yorkshire, but again more plentiful in the northern counties of England, and the south of Scotland ; it is a common bird in Ross-shire, has been found in Caithness, but is only known as a straggler in the Outer Hebrides and in the Orkneys. In Ireland it is by no means rare.

Range outside the British Islands.— Found throughout the greater part of Europe, but nesting less frequently in the Mediterranean countries than in the north ; in Italy it breeds only in the mountains. It does not quite reach the Arctic Circle in summer, occurring in Scandinavia as high as 65° N. lat., and in Russia attaining the same latitude. Its eastern range extends to the government of Perm, where it is replaced by the Siberian Chiffchaff, *Phylloscopus tristis*, which also takes its place in the Petchora Valley. According to Pleske, our Chiffchaff breeds in the government of Orenburg, north of the Ural river, but in Central and Southern Russia is only seen on migration, and it is also a migrant to the valleys of the Amu Darya, wintering in Persia, Asia Minor, Greece, and Palestine, and as far south as Abyssinia. In the Canary Islands it is replaced by an allied species, *Phylloscopus fortunatus*.

Habits.—These resemble those of the other members of the genus, but the Chiffchaff is less easily observed than either the Wood or Willow-Warblers, as it seldom sings in the open, but is more a frequenter of shrubberies and ivy-clad woods, in which it manages to conceal itself effectually. Its tell-tale note, from which the name of *Chiffchaff* is derived, betrays its presence, but the bird is by no means easy of observation, except in the vicinity of its nest. Its food consists of small insects and caterpillars, in pursuit of which it searches the leaves diligently like the Willow-Warbler, and it is quite as active as the latter bird, though it has not such a rapid flight, owing doubtless to its more rounded and less migratory wing.

Nest.—This is generally placed on the ground. It is half domed as a rule, but not invariably, and is composed of dried grass, rather roughly put together on the outside, but more neatly on the inside of the nest, which is usually lined with feathers. No moss is used, as in the case of the Willow-Warbler, and the feather-lining is sometimes very scanty, as is also the case occasionally with the nest of the last-named species. The Chiffchaff often builds in the open, by the side of a public road, and will place its nest in a stunted bush about a foot from the ground. On one occasion we found a nest in a shrubbery, at Avington Park, built in among the growers of an elm tree among the dead leaves and rubbish, at a height of quite four feet from the ground. The nest was shaped like that of a Wren, and opened outwards, but was built of the usual rough grass of the Chiffchaff's nest. That there should be no mistake about the species to which the nest belonged, we caught the hen-bird in a butterfly-net, as she quitted the nest, and the skin is in the British Museum at this day, for, on finding that the eggs were just hatching out and could not be blown, we sought to let the little captive go, but found that she had died of fright in the net, and we were, therefore, obliged to make a specimen of her for the Museum.

Eggs.—From five to seven in number. Ground-colour china-white or creamy-white. As with the Willow-Wren, there are two distinct types of eggs, one with numerous small dots, and one with more scattered but larger spots and blotches. The spots are deep chocolate or reddish-brown, or more often purplish-brown, almost black. Underlying spots of violet-grey are seen in many eggs, but there is seldom an indication of a ring round the larger end. Axis, 0·6–0·65 inch; diam, 0·45–0·5.

THE YELLOW-BROWED WILLOW-WARBLER. PHYLLOSCOPUS SUPERCILIOSUS.

Motacilla superciliosa, Gm., S. N., i., p. 975 (1788).
Phylloscopus superciliosus, Newt. ed. Yarr., i., p. 443 (1873); Dresser, B. Eur., ii., p. 469, pl. 474 (1874); Seeb., Cat. B. Brit. Mus., v., p. 68 (1881); id. Hist. Br. B., i., p. 441 (1883); B. O. U. List Br. B., p. 15 (1883); Lilford, Col. Fig. Br. B., pt. v. (1887); Saunders, Man., p. 59 (1889).

Adult Male.—General colour above olive-green, gradually becoming lighter and more yellowish-green on the lower back, rump, and upper tail-coverts, so that the head appears somewhat more dingy than the back; down the centre of the crown an indistinct line of yellow; lesser and median wing-coverts like the back, the latter with yellow tips forming a band; the greater coverts dusky brown, externally yellowish-green and pale yellow at the tips, forming a second wing-band ; primary-coverts and quills dusky brown, externally greenish-yellow, these margins not reaching to the base of the secondaries, so that there appears a dusky patch on the wing formed by the primary-coverts, and a second one at the base of the secondaries, caused by the absence of yellow margins ; the inner secondaries more broadly edged with white ; tail-feathers dusky brown, edged with yellowish-green, and with a narrow pale fringe along the tip of the feathers ; sides of face dusky olive, with a dusky line through the eye and along the upper edge of the ear-coverts ; eyelid and a distinct eye-stripe pale yellow ; under surface of body ashy-whitish, clearer on the abdomen, with streaks of yellow on the breast ; the flanks greenish, washed with yellow ; under wing-coverts white, washed with yellow ; axillaries and edge of wing bright sulphur-yellow ; quills dusky below, whitish along the inner web ; bill dark brown, paler at the base of the lower mandible ; feet and claws brown ; iris hazel. Total length, 3·8 inches ; culmen, 0·4 ; wing, 2·1 ; tail, 1·45 ; tarsus, 0·7.

Adult Female.—Similar to the male. Total length, 3·5 inches ; wing, 2·15.

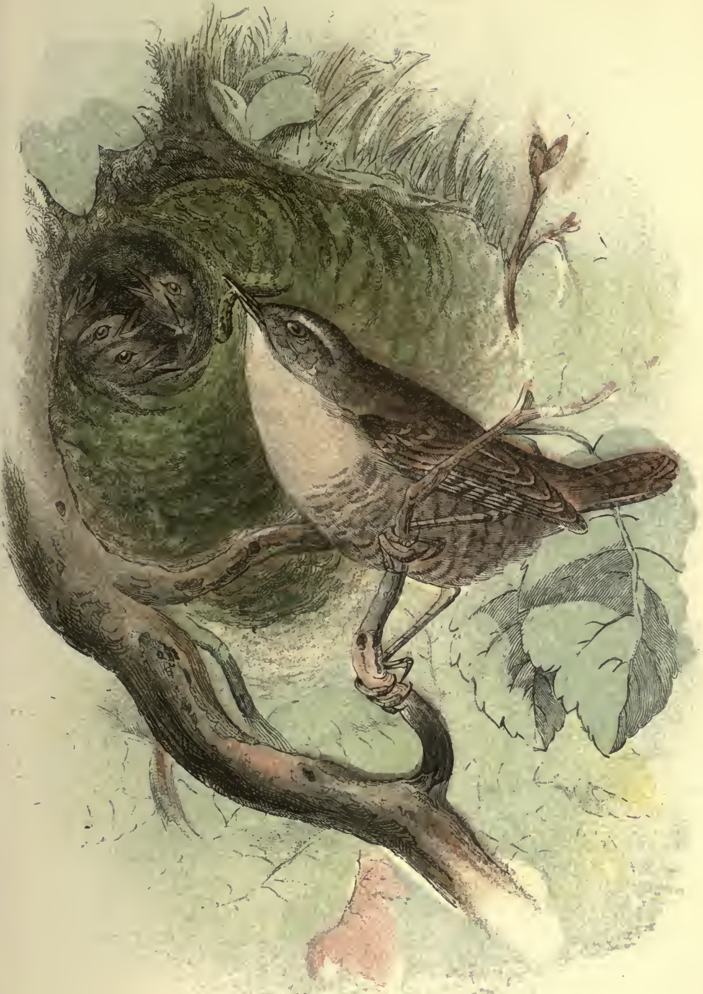
Winter Plumage.—Decidedly more olive than in the summer time, when the plumage gets bleached and worn, and presents an ashy appearance. The central streak on the crown becomes whiter and more distinct, as does also the eyebrow, but the double wing-bar is never completely abraded or lost.

Range in Great Britain.—The present species has occurred occasionally in the British Islands, some seven specimens having now been met with since the first was procured by the late Mr. John Hancock, in Northumberland, on the 26th of September, 1838. Since that date the species has been procured in Lincolnshire, Gloucestershire, the Scilly Islands, in the Shetlands, and even in County Kerry in Ireland.

Range outside the British Islands.—This is a Siberian species which wanders westward in autumn, when it has been met with near Berlin, Vienna, and Leyden, and has occurred at least sixty times in Heligoland, over which island it appears to pass nearly every autumn on migration, between the last week in September and the end of October or the first week in November. According to Dr. Pleske, the Yellow-browed Warbler nests throughout the whole of Siberia, from the Valley of the Ob to the Sea of Ochotsk, but has not yet been found in Kamtschatka. It winters in Southern China, the Burmese countries, and in India.

Habits.—Mr. Seebohm describes his meeting with this species on the Yenesei He writes: "On the willows of the steep bank of the river little birds were feeding, industriously picking up insects on the naked branches, and sometimes making flights in the air to catch a gnat upon the wing. Presently I heard a plaintive 'weest,' which reminded me of Heligoland; and on shooting the bird I picked up a Yellow-browed Willow Warbler, as I expected. There was quite a little party of these diminutive creatures; and they were so tame after their long journey that I watched them for some time hopping from twig to twig, diligently seeking for food. I was often within four feet of one of them, and could distinctly see the white eye-stripe, and the two bars across the wing. . . . But although the Yellow-browed Warbler was thus early in arriving (June 2), it did not appear to be in any hurry to commence building operations. It soon became very common, frequenting almost exclusively the pine-forests on the banks of the Koorayika and the Yenesei. It was not particularly shy; and on more than one occasion I watched it for some time at a distance of only a few feet. On one occasion only I heard it make any attempt at a song; this was on the 21st of June. The bird was perched on the extreme summit of a spruce, and stood shivering its wings, uttering a few plaintive notes, most of them poor feeble variations of its call-note. On the 26th of June I was fortunate enough to find its nest. Curiously enough I was this time also in company with a Heligolander, Mr. Boiling, the ship-builder of Yen-e-saisk. Late in the evening we were strolling through the forest between the Koorayika and the Yenesei. As we were walking along a little bird started up near us, and began most persistently to utter the well-known cry of the Yellow-browed Warbler. As it kept flying around us from tree to tree, we naturally came to the conclusion that it had a nest near. We searched for some time unsuccessfully, and then retired to a short distance and

PLATE XXVII.



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sat down upon a tree-trunk to watch. The bird was very uneasy, but continually came back to a birch tree, from which it frequently made short flights towards the ground, as if it were anxious to return to its nest, but dare not do so whilst we were in sight. This went on for about half an hour, when we came to the conclusion that the nest must be at the foot of the birch-tree, and we commenced a second search. In less than five minutes I found the nest, with six eggs. It was built in a slight tuft of grass, moss and bilberries, semi-domed, exactly like the nest of our Willow-Warblers."

Nest.—Composed of dry grass and moss, and lined with reindeer-hair, according to Mr. Seebohm.

Eggs.—The above named author describes these as having the ground-colour pure white, spotted very thickly at the large end, in the form of an irregular zone, with reddish-brown, and more sparingly on the remainder of the surface; some of the spots underlying and paler, but not grey, and on one or two of the eggs they are confluent. Axis, 0·6 inch; diam., 0·45. Mr. Seebohm remarks: "The markings are well-defined, like those on the eggs of the Chiffchaff; but the colour is decidedly more like that of the Willow-Warblers, while they approach much more closely the eggs of the Indian Willow-Warbler, *P. humii*, both in colour and size."

THE TREE-WARBLERS. GENUS HYPOLAIS.

Hypolais, C. L. Brehm, Isis, 1828, p. 1283.

Type, *H. hypolais* (L.).

Certain groups of Warblers have a typical coloration of egg, known to every ornithologist. Thus anyone can tell the peculiar egg of a *Cettia*, which is of a brick-red colour, and this style of coloration runs through the eggs of all the species allied to Cetti's Warbler. The same may be said of the members of the genus *Hypolais*, for the eggs of these birds are equally peculiar, having the ground-colour of a purplish-grey or salmon-pink. All the members of the genus are like Willow-Warblers in general aspect, but they have a much longer and flatter bill, approaching that of the Reed-Warblers (*Acrocephalus*) in shape, and having three weak rictal bristles, with some supplementary bristles, as in most Warblers, but in *Hypolais* these are very small, and all but obsolete. The tail is only slightly rounded. In the two species which are found in Central Europe the colour of the under surface is yellow, but in all the other species of the genus the tints are of the plainest description, being brown or grey, with the under surface white. These plain-coloured species, however, never approach the shores of England, and are not likely to occur here, but of the two yellow-breasted species of Europe, one has been found within our limits, and the other, *H. polyglotta*, is an inhabitant of Western France, and might easily occur in England. It may, therefore, be worth while to mention that the two species may be distinguished by the proportions of the primaries. In *H. icterina* the second primary (*i.e.*, the first long one) reaches a point between the fourth and fifth, and in *H. polyglotta* it extends to between the sixth and seventh. In the latter bird the legs are pale brown instead of bluish-grey, and the first, or bastard, primary is long, and exceeds the primary-coverts by 0·1 to 0·25 inch, whereas in *H. icterina* it is generally shorter than the primary-coverts, and never extends more than 0·05 inch beyond them.

THE COMMON TREE-WARBLER. HYPOLAIS HYPOLAIS.

Motacilla hypolais, Linn., Syst. Nat., i., p. 330 (1766).

Hypolais icterina, Newt. ed. Yarr., i., p. 361 (1873); Dresser, B. Eur., ii., p. 321, pl. 81 (1874); Seeb., Cat. B. Brit. Mus., v., p. 77 (1881); B. O. U. List Br. B., p. 17 (1883); Lilford, Col. Fig. Br. B. pt. iii. (1886); Saunders, Man., p. 69 (1889).

Hypolais hypolais, Seeb., Hist. Br. B., i., p. 381 (1883).

Adult Male.—General colour above olive-green, the head like the back; lesser and median wing-coverts like the back; the greater series, primary-coverts and quills light brown, edged with ashy-olive, a little yellower on the primaries, the inner secondaries with very pale margins; tail-feathers light brown, with olive-green edges, and with a narrow whitish fringe along the inner web and round the tips in fresh feathers; ear-coverts a little paler than the back; lores dusky, surmounted by a yellow eye-stripe, which extends from the base of the bill behind the eye; eyelid and under surface of body yellow, deepening on the chest; the sides of the upper breast washed with olive-green, the flanks also slightly washed with greenish; axillaries and edge of wing yellow; under wing-coverts white, washed with yellow; quills dusky-brown below, whitish along the inner web; bill dark brown above, yellow below (in skin), the lower mandible horn-colour in life; feet and claws pale lead-colour; iris hazel. Total length, 5·2 inches; culmen, 0·55; wing, 2·95; tail, 2·0; tarsus, 0·8.

Adult Female.—Does not differ from the male in colour. Total length, 5·4 inches; wing, 3·0.

NOTE.—The large size, the flattened and Flycatcher-like bill with its yellow lower mandible, and the bright yellow under surface, seem to distinguish this species from any of the Willow-Warblers in this country.

Range in Great Britain.—Only an accidental visitor, which has not occurred more than half-a-dozen times. This is the more curious, as the species ranges on migration to the south of Africa like the Willow-Warbler, and, on its return to Europe, is plentiful almost within sight of the shores of Great Britain. Of the five recorded examples of *H. hypolais* in this country, four have occurred in summer, viz., at Holderness, in Lincolnshire, in May, 1891; near Dover, in June, 1848; near Newcastle, in June, 1889; and in co. Dublin in June, 1856, the only autumn-killed example being the one procured by Mr. Power, near Blakeney, in Norfolk, in September, 1884.

Range outside the British Islands.—In the south of Europe this Warbler arrives towards the end of April, but does not reach its northern habitats till the early part of May. It is generally distributed over Central Europe, and inhabits Denmark, Holland, Belgium, and the north-east of France during the summer, and ranges, so Mr. Howard Saunders believes, to about the line of the Somme, to the west of which river, as indeed throughout the greater part of France and the Peninsula, it is replaced by *H. polyglotta*. In Southern Scandinavia the Tree-Warbler is common, but becomes rarer to the northward, reaching 67° N. lat. in Norway, and about 65° in Sweden. It occurs near Archangel, and is found in the Ural Mountains up to 57° N. lat. Mr. Seebohm says that it has been found to the east of the Urals, in the valley of the Tobol river; but Dr. Pleske remarks that if the species really occurs in Siberia it can only be exceptionally the case. Its northern range in Russia is coincident with that of the birch region, according to Dr. Pleske, who says that it has twice been noted from the Caucasus, and Mr. Seebohm has received a specimen from Lenkoran. It passes through Asia Minor, Greece, and North-east Africa in migration, making its way to South Africa and Damara Land, where it passes the winter. *H. polyglotta* preserves its western character as a species even in the winter season, and migrates to Senegambia.

Habits.—These are well described by Mr. Seebohm, who, however, does not think much of the bird's song, nor will he allow that it deserves the name often given to it of the "*Melodious* Willow-Warbler." In Germany it is called "Spottvogel," or "Mocking Bird," from its supposed adaptation of the notes of other birds. Mr. Seebohm says: "Perhaps, on the whole, the song of the Common Tree-Warbler comes nearest to that of the Marsh Warbler; but it often reminds you strongly of the song of the Sedge-Warbler. At other times you may trace a fancied resemblance to the chirping of the Sparrow, the scolding of the Whitethroat, or the scream of the Swift; but all rattled off at such a rate, one after the other, and repeated so often, that it arrests the attention at once. I have heard it in widely-different localities, and very often; but in spite of its wonderful variety, I think the song is original, and can see no reason for supposing the bird to be more of a 'mocking' bird than a Song-Thrush or a Nightingale. Some writers have compared the song to that of the Nightingale; but in quality of voice, in the richness of its tones, and the melody of its notes, it is immeasurably inferior to that bird, and the best one can say of its voice is that it is a very high soprano. If it were a common bird, one might say that it screamed, or even shrieked: the song does not fill the ear like that of the Nightingale."

"The Common Tree-Warbler is essentially a lover of isolated trees. He does not seem to care very much for the thick forest, but delights to sing his song and build his nest in the trees in the gardens and the hedgerows. Like the Robin, he seems to like to be close to the houses; and, like that bird, he has the reputation of being very quarrelsome and very jealous of the approach of any other of his species on his special domain. His alarm note is a *tek-tek-tek*, often heard in an angry tone. In its habits the bird combines the actions of a Tit with those of a Flycatcher, feeding for the most part on insects; but in autumn it is said to vary the diet with ripe cherries, currants, elderberries, etc."

Nest.—Described by Mr. Seebohm as a very beautiful structure, generally built in the fork of a small tree, eight or ten feet from the ground. He says that the nest is quite as handsome as that of the Chaffinch, but slightly smaller, more slender, and deeper. It is composed of dry grass, deftly interwoven with moss, wool, spiders' webs, thistle-down, strips of bark, and lichens, lined with fine roots, grass-stalks, and horsehair.

Eggs.—Four or five in number, rarely six. They are pinkish stone-colour, with spots, and lines, and scratches, of black or purplish-brown. The clutches vary in the extent of the spotting, some being sprinkled with fine dots, while others are more boldly spotted, like those of a Bunting. In the latter small underlying dots are visible, but in the smaller spotted eggs the underlying dots are scarcely perceptible. Axis, 0·65–0·75 inch; diam., 0·5–0·6.

THE REED-WARBLERS. GENUS ACROCEPHALUS.

Acrocephalus, Naum., Nat. Land- und Wasser- Vög., nordl. Deutschl. Nachtr., iv., p. 199 (1811).

Type, *A. turdoides* (Meyer).

The Reed-Warblers form a very natural group of birds, found in nearly every portion of the Old World. They have a larger bill than the majority of the Warblers, having this organ rather depressed and widened near the base, the rictal bristles strong and well-developed, and arranged in a horizontal row. The wing and tail are about equal in length, the latter being more rounded than in *Hypolais*, but not so much as in *Locustella*. The outer feathers are more than three-quarters the length of the tail. The first, or bastard, primary is so small that it does not reach to the tip of the primary-coverts, and is less than a third of the length of the second. It is, however, a little longer in birds of the year.

THE AQUATIC WARBLER. ACROCEPHALUS AQUATICUS.

Motacilla aquatica, Gm., Syst. Nat., i., p. 953 (1788).
Acrocephalus aquaticus, Newt. ed. Yarr., i., p. 380 (1873); Dresser, B. Eur., ii., p. 591, pl. 89 (1876); Seeb., Cat. B. Brit. Mus., v., p. 89 (1881); id. Hist. Br. B., i., p. 357 (1883); B. O. U. List Br. B., p. 20 (1883); Lilford, Col. Fig. Br. B., pt. ix. (1888); Saunders, Man., p. 79 (1889).

Adult Male.—General colour above tawny-buff, becoming clearer on the lower back, rump, and upper tail-coverts, the whole of the upper parts broadly streaked with black centres to the feathers, less distinct on the rump and upper tail-coverts; wing-coverts blackish, edged with pale tawny-buff, the innermost secondaries similarly coloured; primary-coverts and quills dark brown, with narrow tawny-brown margins, broader on the secondaries, which appear more uniformly rufous near the bases; tail-feathers dark brown, with narrow tawny edges; crown of head pale tawny-buff in the centre, with a broad black streak along each side of the crown, followed by a broad eye-brow of pale buff; cheeks and under surface of body light tawny-buff, a little whiter on the throat and abdomen, and deeper on the sides of the body and under tail-coverts; under wing-coverts and axillaries whitish, slightly tinged with buff; bill very slender, dark brown above, paler on the lower mandible; feet pale clay-yellow; iris hazel. Total length, 5 inches; culmen, 0·55; wing, 2·4; tail, 2·0; tarsus, 0·85.

In **Summer Plumage** there are some narrow blackish streaks on the fore-neck and sides of the body. This is rather an unusual circumstance with a Warbler, the possession of streaks on the under parts being generally considered to be a sign of immaturity.

NOTE.—The Aquatic Warbler can only be mistaken for the Sedge-Warbler in this country, and from this bird it is easily recognised by the broad mesial streak on the crown, flanked by the two black bands which extend above the pale eyebrow for the whole length of the crown. The bird is hardly a true *Acrocephalus*, for its bill is small and weak, and more like that of the Grasshopper Warbler. The first, or bastard, primary is very small, and does not reach to the end of the primary-coverts. The second and third primary-coverts are equal and longer than the fourth.

Range in Great Britain.—An accidental visitor, but one which may very easily have been overlooked and mistaken for the Sedge-Warbler. Three authentic instances of its occurrence have been recorded, the first specimen having been identified by Professor Newton in Mr. Borrer's collection. This bird was shot near Hove, in October, 1853. Mr. Harting received a second example from Leicestershire, obtained in the summer of 1864, and there is a third specimen, killed near Dover, in the Museum of the latter town.

Range outside the British Islands.—The Aquatic Warbler breeds in most portions of Central Europe, as far as the south of Denmark and the Baltic Provinces, but is of rare occurrence in Holland and Belgium, and only visits Northern France on migration. It also occurs in Heligoland occasionally. In Italy, as well as in Sicily and Sardinia, it breeds, but is recorded by Mr. Howard Saunders as an autumn migrant only in Spain. In Poland and South Russia it also occurs, reaching to the Ural Mountains as high as 56° N. lat. The winter home is probably North Africa.

Habits.—Arrives at its nesting quarters towards the end of April, a week or two before the Sedge-Warbler, and breeds a little earlier than that bird. Lord Lilford has found it to be less of a reed-loving species than the Sedge-Warbler, and Mr. Seebohm says that its home is more in the swamps, neglecting the large reed-beds, and choosing the ditches, ponds, and banks of lakes and rivers, which abound in coarse aquatic vegetation, and being especially partial to sedges, in which it delights to hide. "Tangled masses of wild-roses, brambles, and thorn-bushes are also places where it is often found. Like all its congeners it is an active and restless bird, and is remarkably cautious and sly, concealing itself on the least approach of danger. It is said never to hop, but on a branch or on the ground to run almost like a Mouse. The song is described as like that of the Sedge-Warbler, but is not so long, and lacks the clear flute-like notes of the latter bird." (*Seebohm*, *l.c.*)

Nest.—Placed near the ground, sometimes at a height of a foot or so, but never actually upon it, never suspended in reeds, but built in a bunch of sedge or water-plants, or in a thorn- or willow-bush overgrown with rank herbage. It is suspended between the stalks of the adjacent plants, which are woven into its sides. The material consists of coarse grass, with finer grass and roots, and always neatly lined with horsehair. Spiders' webs, the flowers of the cotton-grass, and occasionally feathers, are also used in the construction of the nest.

Eggs.—From four to five. Like the eggs of the Sedge-Warbler, next described. Mr. Seebohm says that there is no character by which they can be distinguished from the eggs of the latter bird, excepting that perhaps they are a trifle smaller, and not so yellow in tint. Axis, 0·67–0·7 inch; diam., 0·5–0·52.

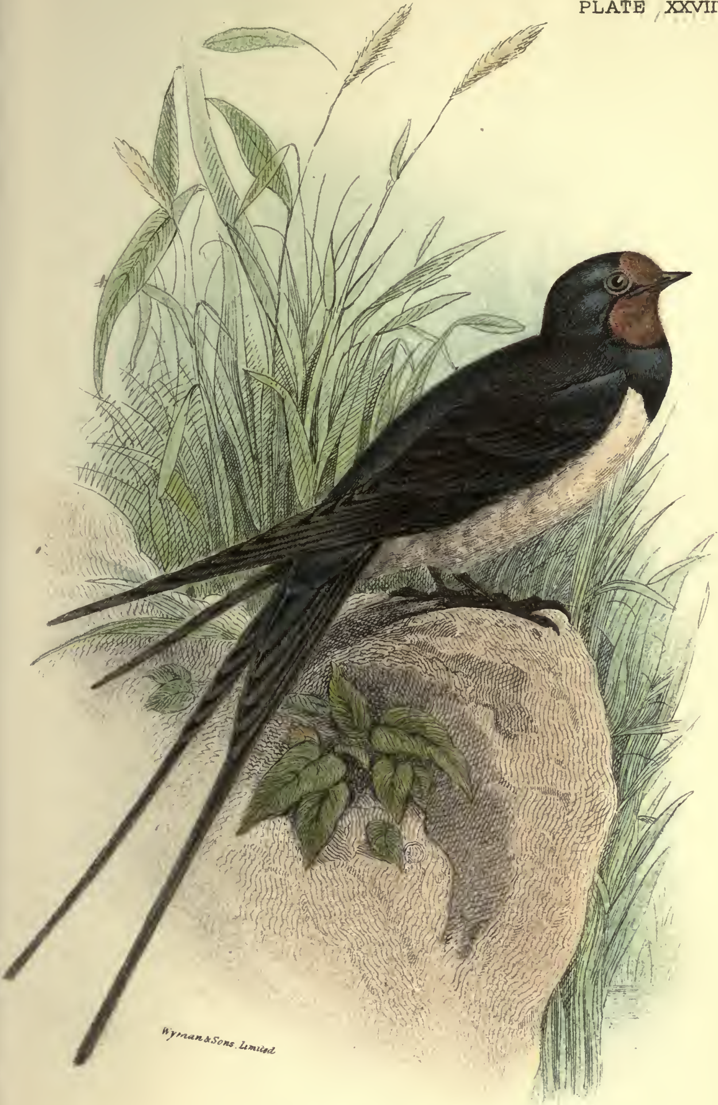
THE SEDGE-WARBLER. ACROCEPHALUS PHRAGMITIS.

(*Plate XXI. Fig.* 1.)

Sylvia phragmitis, Bechst. Orn. Taschenb., p. 186 (1802).
Calamoherpe phragmitis, Macg., Br. B., ii., p. 390 (1839).
Acrocephalus schœnobanus (L.), Newt. ed. Yarr., i., p. 376 (1873); Dresser, B. Eur., ii., p. 597, pl. 90, fig. 2 (1876).
Acrocephalus phragmitis, Seeb., Cat. B. Brit. Mus., v., p. 91 (1881); id. Hist. Br. B., p. 352 (1883); B. O. U. List Br. B., p. 20 (1883); Lilford, Col. Fig. Br. B., pt. 2 (1886); Saunders, Man., p. 77 (1889).

Adult Male.—General colour above russet-brown, with dusky brown centres to the feathers, the crown like the back, but the rump and upper tail coverts more distinctly tawny and nearly uniform; lesser wing-coverts like the back, the median and greater series, as well as the innermost secondaries blackish, edged externally with tawny-buff; primary-coverts brown, blackish at the ends, forming an indistinct alar speculum; quills and tail-feathers dark brown, with tawny edgings, the latter with faint margins to the tips of the feathers, more distinctly seen underneath; a very well marked eyebrow extending from the lores to above the ear-coverts, and accompanied by a less defined black band along the side of the crown; lores dusky; ear coverts dull tawny-buff; throat and centre of breast and abdomen white; fore-neck, chest, and sides of body tawny-buff, deepening in colour on the flanks and under tail-coverts; axillaries like the breast; under wing-coverts white, with a slight tinge of tawny-buff; quills dusky below, whitish along the edge of the inner web; bill dark brown above, with

PLATE XXVIII.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CHIMNEY SWALLOW.

the mandible paler; feet pale brown; iris hazel. Total length, 5 inches; culmen, 0·55; wing, 2·5; tail, 1·85; tarsus, 0·8.

Adult Female.—A little duller in colour than the male, and less rufous on the rump. Total length, 5 inches; wing, 2·35.

Young.—Similar to the adults, but with a yellowish tinge below, and distinguished by dusky triangular spots on the fore-neck.

In **Winter Plumage**, *i.e.*, after the autumn moult, the general colour of the under surface is much more rufescent both in young and old birds, the young ones still retaining the spots on the fore-neck. The eye-brow is more suffused with buff.

NOTE.—The Sedge-Warbler is easily recognised from the Reed-Warbler by its striped upper surface, and by its distinct eyebrow. There are many minor characters for differentiation, such as its more slender bill, rufescent rump, &c., as well as pronounced distinctions in the song, method of nesting, colour of eggs, &c. From the Aquatic Warbler the Sedge-Warbler is easily recognised by the light band down the centre of the crown and the striped rump of the former species.

Range in Great Britain.—A summer visitor, apparently breeding everywhere, though becoming more local in the northern parts, and not recorded from the Shetlands or the Hebrides. In Ireland it is a very well-known visitor throughout the island.

Range outside the British Islands.— Distributed generally over Europe, breeding nearly everywhere, except in some of the Mediterranean countries, in the southern portion of which it is only known as a migrant. Mr. Howard Saunders says that he did not actually find it breeding in Southern Spain, but he has specimens procured at Malaga as late as the 25th of July. These may be, however, early migrants on their way south. To the northward it has been found as high as 70° N. lat. in Norway, but eastwards it does not reach quite such a high latitude, occurring near Archangel and again in the Petchora up to 68°, and on the Ob and Yenesei rivers to 67° N. lat. Dr. Pleske states that it is only known as a migrant in the Crimea, but nests sparingly in the Caucasus as well as in the Altai mountains and Northern Turkestan, though in the valley of the Amu-Darya and on the western shores of the Caspian it is only a migrant.

The winter home of the Sedge-Warbler is in South Africa, whither it migrates apparently by the eastern side of the continent, as it has been obtained in East Africa on passage.

Habits.—Although not often seen by the ordinary observer, the Sedge-Warbler's note is familiar to most dwellers in the country, and those who do not know the bird by sight are well acquainted with its noisy and chattering song, which can be heard from early morning till late at night, and even when darkness has fallen, the Sedge-Warbler and its companion, the Reed-Warbler, may be heard singing, keeping company with the richer notes of the Nightingale. It does not, as its name would imply, confine its habitat to the sedges, for it is found in all kinds of situations, seldom very far from water. It will hunt for food by the side of a lake or river, keeping well out of sight, excepting when it is tempted to ascend to the top of a reed or small bush and give forth its song as it works its way up. It may, however, be just as often met with in a reedy ditch, and as often as not in bushes and shrubberies at some little distance from the water, to the neighbourhood of which, however, it always returns before long. In the autumn the family parties frequent the willows and reed-beds in the Thames Valley, and the young birds may often be seen running, like little Mice, over the masses of dead rushes and plants which collect in some of the reed-beds and back-waters. The song of the Sedge-Warbler is unmistakable, and is uttered from the depths of its retreat. A stone thrown in to start the bird generally results in setting it off singing, and it is very difficult to dislodge it and drive it into the open. When not alarmed, however, it may often be seen flying across the rivers to the other bank, or taking short excursions to the neighbouring hedge-rows. Most of the notes of the song are harsh and not altogether musical, but some of them are very clear and pleasing. When alarmed it gives vent to a kind of "*churr*"-ing note, especially when anyone approaches the vicinity of the nest.

Nest.—This is not suspended between reeds like that of the Reed-Warbler, but, when built among the rushes, is either supported on dead cross-stems of the latter, or it is placed on an overhanging branch. Occasionally it is placed in a bush some height from the ground, generally at a little distance from the latter, and more rarely on the ground itself, concealed among the herbage. It is an artless structure, somewhat shallow, composed of dry grass-stems, pieces of dead water-plants, with a little hair for the lining, and some scraps of vegetable down. Mr. Robert Read draws our attention to the fact that there is nearly always a feather, and sometimes two, left projecting over the eggs in the nest, and serving to hide the latter from view. This is especially the case when the nest is built low down in a damp situation. The nest is often found at a considerable distance from any water, sometimes a quarter of a mile away.

Eggs.—From four to six in number, and very uniform in appearance. The ground-colour is greenish-white, but this is seldom to be seen, owing to the uniform clouding of the eggs, which vary from olive to brown or stone-grey. The mottlings, when present, are yellowish-brown or dark brown, occasionally reddish-brown, and there is generally a hair-like line of black at the larger end, these pencilled lines being more characteristic of the uniform clutches than of the mottled ones. Axis, 0·7–0·8 inch; diam., 0·5–0·55. Mr. Robert Read informs us that he has taken eggs of this bird, near Glasgow, of a beautiful salmon-pink colour.

THE GREAT REED-WARBLER. ACROCEPHALUS TURDOIDES.

Turdus arundinaceus, Linn., Syst. Nat., i., p. 296 (1766).
Acrocephalus arundinaceus (L.), Newt. ed. Yarr., i., p. 364 (1873); Dresser, B. Eur., ii., p. 379, pl. 88 (1878).
Acrocephalus turdoides (Meyer), Seeb., Cat. B. Brit. Mus., v. p. 95 (1881); id. Br. B., i., p. 361 (1883); B. O. U. List Br. B., p. 19 (1883); Lilford, Col. Fig. Br. B., pt. ii. (1886); Saunders, Man., p. 75 (1889).

Adult Male.—General colour above, brown, rather more dingy on the head, and a little more rufescent on the lower back and rump, and upper tail-coverts; wing-coverts like the back, the bastard-wing darker brown and contrasting with the rest of the coverts; primary-coverts and quills dark brown, edged with rufescent-brown; tail-feathers lighter brown, with whitish fringes at the ends, and margined with reddish-brown; lores, sides of face, and ear-coverts ashy-brown, dusky in front of the eye, with a distinct white eyebrow, reaching from the nostrils to a little beyond the eye; eyelid also whitish; cheeks, throat, and under surface of body white, the breast and sides of the body tawny-buff, as well as the thighs and under tail-coverts; under wing-coverts, axillaries, and quill-lining, rich tawny-buff; bill dark brown, the lower mandible lighter and more yellow at the base and at the gape; feet pale horn-colour; iris brown. Total length, 7·8 inches; culmen, 0·8; wing, 3·6; tail, 2·95; tarsus, 1·3.

Adult Female.—Does not differ from the male in colour. Total length, 7·5 inches; wing, 3·6.

In **Autumn and Winter Plumage** the colours are a little more fulvescent, especially on the eyebrow and on the underparts.

Young Birds, after the autumn moult, are decidedly more tawny than in summer, and have some indistinct streaks on the lower throat and fore-neck. During the nesting season, the plumage gets much abraded and worn, so that the throat and breast become bleached white, and the narrow whitish tips to the quills and tail-feathers wear off.

Range in Great Britain.—A rare and occasional visitor, the authentic instances of its appearance not exceeding half-a-dozen, while many supposed records are unworthy of credence, as is the case with all the statements of its breeding in this country. Not that there is any reason why the species should not do so, for it is common on the Continent in countries almost within sight of England.

Range outside the British Islands.—The Great Reed-Warbler nests throughout the greater part of Europe south of the British Islands and the Baltic, and is only an accidental visitor to the south of Sweden. On the western shores of the Baltic Sea it occurs, according to Dr. Pleske, as far north as 59° 30° W. lat., thence its range tends southward to 54° on the Volga, and rises again in the Urals to 57°, but the above-named author believes that its frontier line in the Volga district may require rectification in a northerly direction. It breeds as far east as Turkestan, and through Persia, Asia Minor, and Palestine. To the eastward it crosses the range of *Acrocephalus stentoreus*, which is a resident form in Egypt, Persia, Transcaspia, and Turkestan. The winter home of the Great Reed-Warbler extends south to the Transvaal in Africa, but it would also appear to follow many of the river-systems in the last-named continent, as the late Mr. Jameson procured it on the Aruwhimi river, and it has also been met with on the Lower Congo.

Habits.—In the reed-covered marshes affected by this bird, it is very easily discovered by its powerful song and large size, which identify it at once when it flies. It often sings as it ascends a reed to the top, its note commencing with a harsh "*caragh*, *caragh*," and then continuing like an enlarged edition of the Sedge-Warbler's song. When it has attained to the summit of the reed, it finishes its song, and flies off for a little distance, again drops like a stone into the reed-bed, and commences to sing again. When threading our way through the Hanság marshes in Hungary, after the International Congress of Ornithologists in 1891, we saw and heard numbers of these birds, and afterwards obtained specimens in a little patch of reeds near the Neusiedler lakes, where there were several pairs of them. It has several croaking notes which it introduces into its song, and it is heard late into the evening. Its food consists of insects, but it is also said to feed on elder-berries in the autumn.

Nest.—Suspended in reeds, and very skilfully attached to the latter. It is made of dead reeds, with a few roots interwoven, and lined with grass stems and the flower of the reed. Sometimes a little moss or the leaves of other water-plants are added.

Eggs.—From four to six in number, and very handsome. The ground-colour varies from pale blue to greenish-blue or greenish-white, and the eggs are very boldly blotched and spotted. The blotches, which are generally at the larger end of the egg, are greenish or reddish-brown, sometimes clouding the larger end entirely; in many cases they are so dark as to appear almost black. The underlying markings of violet-grey are strongly pronounced, and often partake of the nature of blotches, almost as large as the brown overlying markings. Axis, 0·8–1·0; diam., 0·6–0·65.

THE REED-WARBLER. ACROCEPHALUS STREPERUS.

(*Plate XXI., Fig.* 2.)

Sylvia strepera, Vieill., N. Dict. d'Hist. Nat., xi., p. 182 (1817).

Calamoherpe arundinacea, Macg., Br. B., ii., p. 395 (1839).

Acrocephalus streperus, Newt. ed. Yarr., i., p. 369 (1873); Dresser, B. Eur., ii., p. 567, pl. 87 (1877); Seeb., Cat. B. Brit. Mus., v., p. 102 (1881); B. O. U. List Br. B., p. 18 (1883); Lilford, Col. Fig., Br. B., pt. iii. (1886); Saunders, Man., p. 71 (1889).

Acrocephalus arundinaceus, Seeb., Br. B., i., p. 367 (1883).

Adult Male.—General colour rufescent olive-brown, the lower back, rump, and upper tail-coverts showing a slight inclination to ruddiness in the tint of the brown; wing-coverts like the back, the bastard-wing, primary-coverts and quills dusky brown, edged with the same colour as the back; tail-feathers brown, edged with lighter brown, and having a faint indication of a pale fringe at the tips; crown slightly more dingy than the back, but like the mantle, lores, and ear-coverts dusky brown, with a faint streak of whitish above the eye; cheeks, throat, and under-parts white, with a fulvescent tinge on the breast and sides of the body, the flanks browner; under tail-coverts white, with a slight fulvous tinge, as also the under wing-coverts, axillaries, and quill-lining; bill dark brown above, the under mandible paler; feet and claws purplish-brown; iris brown. Total length, 5·1 inches; culmen, 0·6; wing, 2·5; tail, 2·0; tarsus, 0·9.

Adult Female.—Similar to the male in colour. Total length, 5·4 inches; wing, 2·5.

Young.—More dingy and reddish-brown than the adults; the under surface of the body fulvescent, and inclining to tawny-buff on the flanks; the throat dingy fulvous; and the abdomen ashy white.

Range in Great Britain. — Generally distributed over the southern and midland counties, becoming somewhat rarer in the south-west, but fairly common in Wales. To the north it becomes gradually rarer and more local, and authentic records from Scotland and Ireland are wanting.

Range outside the British Islands.—The northern limit of the range of the Reed-Warbler in Europe appears to be about 58° N. lat., but the species extends into Southern Sweden; elsewhere, below that line, it appears to breed regularly, and apparently winters in certain of the Mediterranean countries, and passes through Egypt and Nubia, but its winter quarters in Africa are not yet determined. From the southern part of the Baltic Provinces, according to Dr. Pleske, its breeding range extends across Russia to the government of Kief, and it probably nests in the Crimea, as it certainly does in Transcaucasia, the eastern districts of the Volga, and the Ural Mountains, the Transcaspian countries to Turkestan, and the southern slopes of the Altai Mountains. Its eastern limit is Baluchistan, and we have seen specimens collected by Mr. Cumming at Fao, on the Persian Gulf.

Habits.—The Reed-Warbler is common enough in summer in the south of England, and is abundant in the Thames Valley; but, from its retiring habits, it is not often seen. Its song is, however, a constant feature in a walk by the river-side, and is heard not only from the dense reed-beds, but also from the willows and alder-trees, in both of which situations the nest is often built. In fact, we have more often found the nest of the Reed-Warbler in willows near Cookham than in reeds, and it is sometimes placed at a considerable height from the ground. In the south of England, however, in the reed-covered ditches which Mr. Seebohm so well describes as the haunt of the Reed-Warbler in his "History of British Birds," the nest is nearly always suspended between the stems of reeds, and so common is the bird in this locality that he found eleven nests in the course of a couple of hours.

When the weather is hot and the nights calm, the Reed-Warbler, like the Nightingale, sings nearly through the night, and its song is always more frequently heard towards the twilight. It resembles that of the Sedge-Warbler, and is of the same chattering nature, but is not so loud or so harsh in quality. As a rule, the bird is an inveterate skulker, and seldom quits its retreat, unless driven from it by repeated efforts, and its presence is generally made known only by its song, or by the shaking of the reeds as it hops from one to the other. When the young are able to fly, however, the Reed-Warblers are often to be seen in the bushes, accompanied by their families, and in certain places they form quite a little colony, the old birds feeding the young of the second brood, while the first brood are flying about in the neighbourhood also. The species is even said to nest far away from water; and Mr. Mitford says that he has known them to build in lilac-bushes in his garden at Hampstead.

Nest.—Made of dry grass and roots, with a little wool or thistle-down. When built in the reeds, some of the latter are generally intertwined in the nest.

Eggs. — From four to six in number. Ground-colour, greenish-white or greyish-white, and thickly mottled and spotted with greenish-brown, often collecting round the larger end of the egg, and forming a broad ring. The underlying spots of violet-grey are so mixed with the overlying markings as to be difficult of observation, but they are in reality very numerously represented. Axis, 0·7–0·75 inch; diam., 0·5–0·55.

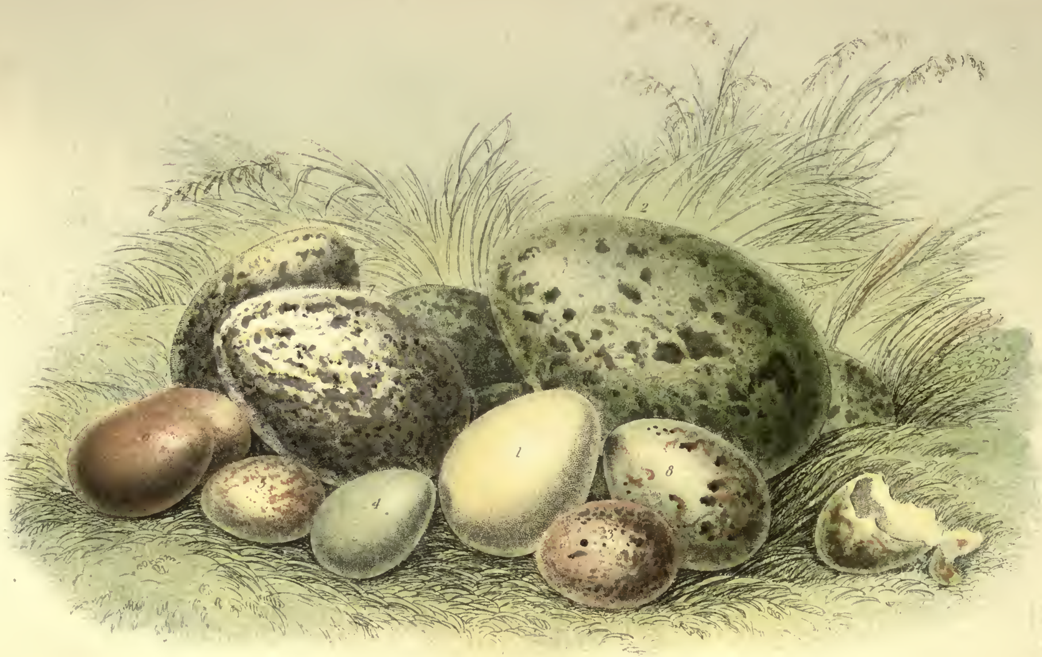
THE MARSH-WARBLER. ACROCEPHALUS PALUSTRIS.

Sylvia palustris, Bechst, Orn. Taschenb., p. 186 (1802).

Acrocephalus palustris, Dresser, B. Eur., ii., p. 573, pl. 87, fig. 2 (1876); Seeb., Cat. B. Brit. Mus., v., p. 101 (1881); id. Br. B., i., p. 375 (1883); B. O. U. List Br. B., p. 19 (1883); Lilford, Col. Fig. Br. B., pt. iii. (1886); Saunders, Man., p. 93 (1889).

Adult Male.—Similar to the Reed-Warbler, and very difficult to distinguish from that species, but it may be recognised by the olive tone of the plumage, which does not show the reddish-brown colour of the rump, which is always more or less perceptible in the Reed-Warbler. The feet are also said to be pale horn-brown, instead of slaty-brown as in the last-named bird. Mr. Seebohm gives the measurements of the wing in the Reed-Warbler as from 2·35–2·7 inches, and of the Marsh-Warbler from 2·45 to 2·8; but we find that in the few undoubted specimens of the latter bird in the British Museum the wing is decidedly longer in *A. palustris* than in *A. streperus*, and extends further down the tail; that is to say, its tip reaches to at least two-

PLATE XXIX.



1 Dipper. 2. Raven. 3. Redbreast. 4. Wheatear. 5. Goldfinch. 6. Nightingale. 7. Magpie 8. Hawfinch

thirds of the extent of the tail, so as to be almost level with the outstretched feet; whereas in *A. streperus* the wing is much shorter, only reaching about half the extent of the tail, and falling far short of the outstretched feet. These characters depend much upon the preparation of the skins; but we have compared only those which seem to have their natural proportions preserved. The colour of the legs, said to be different in life, is not visible in the dried skin, and the character which seems to us to be the most constant is the olive-colour of the upper-parts in *A. palustris* and the want of the rufous shade on the lower back and rump. Many specimens presented to the British Museum as Marsh-Warblers seem to us to be only Reed-Warblers after all. (*Cf.* also Saunders, Man., p. 93). Total length of *A. palustris*, 5·5 inches; wing, 2·9. The proportions of the quills are the same in both species, the bastard-primary not reaching beyond the primary coverts, and the second primary exceeding the fifth in length. We have carefully gone over the series of both these Reed-Warblers in the British Museum, and endorse Mr. Howard Saunders' definition of the Marsh-Warbler as being more of a "greenish olive-brown" in tint, with a sulphur-buff instead of rufous-buff colour on the flanks and upper breast. The same observer says that the feet are pale brownish flesh-colour in life instead of being purplish-brown.

Range in Great Britain.—At present only known from a few isolated instances of its capture, and identified more by the eggs and the nest than by actual birds shot in this country. It may, however, occur more frequently than has been supposed, and it is quite possible that Marsh-Warblers are doing duty for Reed-Warblers in many collections, as the two birds are so difficult to separate. It is said to visit the vicinity of Taunton, in Somersetshire, every spring, and the nest has been taken in Oxfordshire and near Bath, and also in Cambridgeshire. Mr. Robert Read has three nests and eggs taken near Yeovil. Mr. Saunders says that he has seen an undoubted nest of this bird in Mr. Bond's collection, but we agree that the birds which our late friend presented to us at the Museum as "Marsh"-Warblers from the above-mentioned county are really only Reed-Warblers.

Range outside the British Islands.—The Marsh-Warbler occupies in Europe almost exactly the same range as its congener, the Reed-Warbler, and breeds everywhere south of Denmark and the Baltic Provinces, but is a somewhat less western bird in its distribution, as there are parts of Western France whence the bird is not recorded, and no examples have yet been identified from the Spanish peninsula. Its eastward range is given by Dr. Pleske as reaching to the Ural Mountains and to the government of Ekaterinburg. Mr. Seebohm considers that it ranges further to Turkestan and Persia, but more information and a larger series of specimens are needed for the correct definition of the range of this species. It is said to winter in N.E. Africa as far as the Equatorial Provinces, and it reaches Natal on its winter journey. With regard to the occurrence of the species in Africa, we have re-examined the specimen shot by Captain Shelley in Natal, and there is little question that we have rightly identified the species.

Habits.—Arrives in its nesting quarters about the middle of May, and departs at the end of August. The bird is said to be much more restless than the Reed-Warbler, sitting in the open and singing, and taking long flights from tree to tree. Its song is superior to that of the allied species, and much more melodious, being, according to Mr. Seebohm, almost as rich as that of the Nightingale, and decidedly more varied, though not so loud. Sometimes, he adds, we might imagine that we were listening to the song of a Reed-Warbler with an unusually rich voice; but more often the melody recalls the song of the Swallow, the Lark, or that of the Tree-Warblers; while we might also come to the conclusion that the singer had had lessons from a Nightingale or a Bluethroat.

Nest.—According to Naumann, the nest is never placed over water, but always on more or less firm ground, so that it can always be reached by the hand, if the situation chosen be by the side of a stream. The nest is often placed at some little distance from the water in low bushes overgrown with reeds, or in nettles and other water-plants. If the Reed-Warbler is found in the same neighbourhood, as is often the case, the nests of the two species are differently situated, the Marsh-Warbler's being in the herbage near the water, the Reed-Warbler's in the reeds over the water. The nest is composed of round grass-stalks and lined with horsehair; in some nests a little moss or dry leaves are occasionally found.

Eggs.—From five to seven in number. Many of the eggs referred to this species, and said to resemble those of the Reed-Warbler are undoubtedly nothing but light varieties of the eggs of the latter bird. The eggs of the Marsh-Warbler are in fact unmistakable, being of a china-white or greenish-white ground, with the underlying markings of violet-grey or purplish-grey, very strongly developed, and quite as prominent as the overlying spots. These consist of greenish-brown blotches, sometimes light brown, and with purplish-black spots in strong contrast. Axis, 0·7–0·8 inch; diam., 0·5–0·55.

THE GRASSHOPPER WARBLERS. GENUS LOCUSTELLA.

Locustella, Kaup, Natürl. Syst., p. 115 (1829).

Type, *L. nævia* (Bodd.).

The species of *Locustella*, of which some eight different kinds are known, are all inhabitants of the Palæarctic Region, breeding in the northern parts, and wintering in Africa, India, and the Burmese countries, and even as far to the south-east as the Molucca Islands.

They very much resemble the Reed-Warblers in structure and general appearance, but they have a more rounded tail, the outer feathers being very much shorter than the centre ones, and the under tail-coverts are very long. The bill is slender and not flattened; the rictal bristles are weak and scarcely perceptible. The first primary is very small, and does not reach to the end of the primary-coverts, and the second primary-quill is the longest.

THE GRASSHOPPER WARBLER. LOCUSTELLA NÆVIA.

Motacilla nævia, Bodd., Tabl. Pl. enl., p. 35 (1783).
Sylvia locustella, Lath., Ind. Orn., ii., p. 515 (1790).
Sibilatrix locustella, Macg., Br. B., ii., p. 399 (1839).
Acrocephalus nævius, Newt. ed. Yarr., i., p. 384 (1874); Dresser, B. Eur., ii., p. 611, pl. 91 (1874).
Locustella locustella, Seeb., Cat. Brit. B. Brit. Mus., v., p. 115 (1881); id. Br. B., i., p. 340 (1883).

Locustella nævia, B. O. U. List Br. B., p. 20 (1883); Lilford, Col. Fig. Br. B., pt. ix. (1888); Saunders, Man., p. 81 (1889).

Adult Male.—General colour above olive-brown, all the feathers centred with dark brown, producing a mottled appearance, the markings being smaller on the head, almost obsolete on the sides of the neck, and not very distinct on the lower back and rump, disappearing entirely on the upper tail-coverts; lesser and median wing-coverts like the back, the greater series, as well as the primary-coverts and quills, dusky-brown, externally olive-brown, the margins rather broader on the innermost secondaries; tail feathers dark brown, with olive-brown margins, and ribbed across with dusky bars, very distinct in certain lights; lores and sides of face dark brown; over the eye a very faint line of whitish; cheeks, throat, centre of breast and abdomen whitish; the sides of the throat, breast, and sides of the body brown, washed with buff; under tail-coverts buffy-white, with dark centres; axillaries and under wing-coverts ashy-fulvous, the latter with dusky centres; bill dark brown, paler on the lower mandible; feet flesh-colour or pale brown; iris clear brown. Total length, 5·3 inches; culmen, 0·5; wing, 2·3; tail, 2·0; tarsus, 0·85.

Adult Female.—Similar to the male in colour and markings, but somewhat warmer brown above, and more fulvescent below. Total length, 5·4 inches; wing, 2·4.

Young.—Slightly more rufescent and not so clear olive-brown above than the adults, and tinged with sulphur-yellow on the throat and breast, with numerous tiny spots of blackish-brown on the lower throat and fore-neck; the under tail-coverts are rufescent, with ashy whitish tips and dark brown centres to the feathers. Even after the spring moult there are often remains of the stripes on the fore-neck, and the under parts are distinctly suffused with yellow. Such specimens are probably birds of the previous year.

NOTE.—The Grasshopper Warbler is easily recognised by its striped back and olive-brown colour. The only Warblers, therefore, with which it might be at first confused are the Sedge-Warbler and Aquatic Warbler, both of which have striped backs. They are, moreover, not only more tawny-coloured birds, but can be recognised at once by their broad whitish eyebrow. The obsolete rictal bristles and the more graduated tail also serve to distinguish a *Locustella.*

Range in Great Britain.—Found in summer nesting throughout the greater part of England and Wales, and being numerous in the northern counties of Northumberland and Durham, while it becomes rarer further north, though its range is known to extend to Arisaig below the Sound of Sleat, according to Mr. Howard Saunders, and further to the Isle of Skye. In Ireland it is also found, and breeds in the eastern and southern districts.

Range outside the British Islands. — Nests throughout Central Europe to the south of the Baltic and throughout Central and Southern Russia, on the northern slope of the Caucasus, according to Pleske, who says that it also extends to Turkestan and the southern slope of the Altai Mountains. It is supposed to winter in Northern Africa, and also in Southern Europe; but it has not been recorded from Greece or Asia Minor, is only known to occur on migration in Italy, only an autumn and winter bird in Southern Spain, as stated by Mr. Howard Saunders.

Habits.—This bird is a greater skulker than any of the other Warblers, and it is more difficult to procure than any of them. Its nest is always well concealed, and the actions of the bird are more like those of a Mouse, as it threads its way through the grass, when disturbed from its home. It is, therefore, one of those species whose presence would never be detected were it not for its extraordinary song, which resembles the note of a Grasshopper, except that it is more powerful and is continued for a longer period, sometimes for as long as two minutes together. Mr. Seebohm does not agree that the sound is ventriloquial, but we have always found it to be somewhat difficult to trace down on the few occasions that we have noticed the species in Berkshire, and it is certainly the case with the allied species, *Locustella fluviatilis*, in Hungary. The Grasshopper Warbler is sometimes found in considerable numbers together on its arrival in spring, and Mr. Oates records the same fact with some of the Eastern species, which winter in Burma. Even in the nesting season many pairs frequent the same district.

The species is sometimes to be observed in the early morning, when it ascends to the top of a reed or bush to utter its monotonous song, which is often to be heard in the twilight, and even after darkness has set in. It by no means affects entirely marshy or even swampy places, though the fens of Cambridgeshire are still one of the strongholds of the species in England; but it is often found in shady plantations or frequenting hedgerows. The flight is uncertain and dipping, the bird carrying its tail spread and depressed, and dropping suddenly into the densest herbage, where it creeps away like a Mouse.

Nest.—On the ground or close to it, and occasionally approached by a kind of "run," or "creep," as Lord Lilford calls it, but it is as often situated in a clump of grass, or at the bottom of a hedgerow, and is by no means invariably well-concealed, though, as a rule, it is very difficult to find, unless its site is betrayed by the flight of the hen-bird from the nest. In Somersetshire, the nest, so Mr. Robert Read tells us, is found amongst clover and vetches, and one nest in his collection was built in a large stalk of cow-parsnip. He has also found it in hawthorn- or blackthorn-bushes in a site similar to that of the Common Whitethroat.

Eggs.—From four to seven. Pinkish in general appearance, sprinkled all over with dots of reddish-brown, and varying in shape from round to long ovals. The grey underlying markings consist of dots which are sprinkled in exactly the same manner as the overlying ones. Occasionally the effect is very dark, the eggs appearing nearly uniform pinkish-brown, while others are very light, showing the white ground very distinctly, and having the spots collected round the larger end so as to form a ring. Axis, 0·65–0·8 inch; diam. 0·5–0·6.

SAVI'S WARBLER. LOCUSTELLA LUSCINIOIDES.

Sylvia luscinioides, Savi, Nuovo Giorn. de Letterati, vii., p. 341, (1824).

Acrocephalus luscinioides, Newt. ed. Yarr., i., p. 389 (1874).

Locustella luscinioides, Dresser, B. Eur. ii., p. 627, pl. 93 (1875); Seeb., Cat. B. Brit. Mus., v., p. 112 (1881), id. Br. B. i., p. 346 (1883); B. O. U. List Br. B., p. 21 (1883); Lilford, Col. Fig. Br. B., pt. ii. (1886); Saunders, Man., p. 83 (1889).

Adult Male.—General colour above, uniform russet-brown, the wing-coverts like the back; quills sepia-brown, externally russet-brown, like the back; the outer edge of the bastard-wing feathers and the first long primary (*i.e.*, second quill) ashy; tail dark brown, slightly paler on the margins, and ribbed with dusky cross-bars under certain lights; head like the back; sides of face lighter brown than the head; eyelid and a faint eyebrow whitish; cheeks, throat, and centre of breast and abdomen dull white; lower throat and chest, as well as the sides of the body and under tail-coverts, pale fulvous-brown, deepening on the flanks and under tail-coverts; under wing-coverts and axillaries light fulvous-brown, like the breast; quills dusky-brown below, ashy along the inner webs; bill dark brown, the lower mandible paler and light horn-brown; feet clear horn-colour, yellowish-brown in skin; iris yellowish brown. Total length, 5·8 inches; culmen, 0·55; wing, 2·5; tail, 2·2; tarsus, 0·9.

Adult Female.—Somewhat darker and more rufous-brown than the male, especially on the under surface of the body. Total length, 5·7 inches, wing, 2·7.

NOTE.—Although it is not very probable that a specimen of Savi's Warbler will again be captured in England, a few notes as to its distinctive characters may be useful. Although it agrees with the Grasshopper Warbler in having the rictal bristles nearly obsolete and in the graduated tail, it is always recognisable from that species by its uniform plumage and generally more russet colour. In the uniformity of the upper surface it approaches, therefore, the Reed-Warblers (*Acrocephalus*), but, in addition to the different structure of the tail, Savi's Warbler may always be distinguished by the vinous buff or reddish colour of the lower flanks and under tail-coverts, while it is of a much darker brown above than any of the true Reed-Warblers.

Range in Great Britain.—Formerly a regular visitor to the Fen districts of England, but no longer to be found there, owing to the drainage and reclamation of the meres, which it inhabited. It appears never to have been an abundant species, and British-killed examples exist in very few collections. Its breeding places were confined to the counties of Norfolk, Cambridgeshire, and Huntingdonshire, and the last recorded instance of its occurrence in England was in Norfolk in June, 1856.

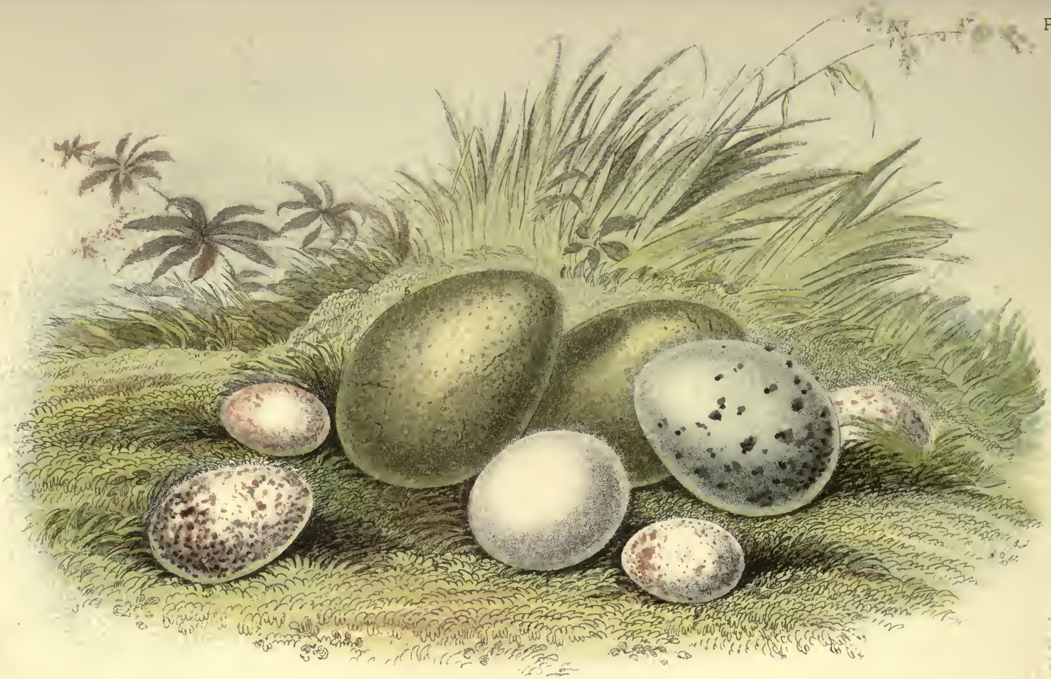
Range outside the British Islands.—Locally distributed through

Central and Southern Europe, wherever its peculiar kind of habitat still exists, but in Holland, where the bird was once common, the same causes of its restriction have been at work, and, owing to the extensive drainage of recent years, it has become much rarer.

It inhabits the Camargue in Southern France, is found again in Andalucia in Spain, in Tuscany and Venetia in Italy, in Austrian Galicia, and from Poland through Central and Southern Russia, east to the Delta of the Volga, and occurring also in Transcaspia and Turkestan, whence the specimens are somewhat paler in colour. In Palestine it has been once noticed by Canon Tristram, but in the Egyptian Delta is not rare, and it breeds in the marshes of Algeria and Morocco, and, according to Canon Tristram, in the oases of the Sahara, as far south as 32° N. lat.

Habits.—Savi's Warbler is said to be less shy than the other species of Reed-Warbler, and does not sing so much at night as the latter. Its song, which is a monotonous whirr, is to be heard all day when the weather is fine, but the bird becomes silent if the weather is boisterous or the nights are cold. It frequents large reed-beds, and diligently climbs up reed after reed, but is only to be seen when it perches on the top of one of them to run off its monotonous reel, as Mr. Seebohm puts it. The call-note is a short *Krr.* From its note it used to be called the "Red Craking Reed-Wren" or "Reel-bird" by the fen-men, just as the Grasshopper Warbler is called the "Reeler" at the present day. From the account of the bird's habits published by Count Casimir Wodzicki we learn that both sexes take part in the construction of the nest, and the male takes part in the duties of incubation. It is a decidedly quarrelsome bird.

Nest.—As with other Reed-Warblers, the nest is carefully concealed. It is not, however, suspended on reeds, but is placed on the tangled blades, or in a tuft of spiky rush, and according to Count Wodzicki, resembles that of a miniature Crake. It is a compound of flat leaves of grass, generally "sweet grass," with narrower leaves for the lining. The English nest in the British Museum is entirely composed of dead rushes and



1. Song Thrush. 2. Gold crest. 3. Swallow. 4. Wren. 5. Jay. 6. King-fisher.

flags, beautiful and compactly intertwined. The lining is also of twisted reeds, which, with the exception of a fragment of moss, seem to constitute the entire material of which the nest is composed.

Eggs.—From four to six in number. Ground-colour dull white or brownish-white, thickly sprinkled with light brown overlying and violet-grey underlying spots, which collect round the larger end of the egg, and form a more or less defined dark zone. In many of the eggs the dark appearance of the large end is due to the predominance of the underlying spots. Axis, 0·75–0·8 inch; diam., 0·55–0·6.

THE THRUSHES. FAMILY TURDIDÆ.

The Thrushes are by many naturalists considered to be the highest of all birds in the natural system, on account of their powers of song, which place them at the head of the "*Oscines*," or "songsters." They are certainly highly-developed birds, and possess great perfection of structure. Many of them evince affinities with the Flycatchers, while others are allied to Warblers. There is, however, one character which separates the Thrushes from the latter family, and that is the spotted plumage of the young birds, a peculiar feature, by which we learn that the Nightingale, the Robin, and the Chats are all Thrushes, though for so many years they have been associated with the Warblers in works on natural history. The latter birds, too, have a double moult, in autumn and again in spring, whereas the Thrushes moult but once in the year, viz., in the autumn, when the young birds throw off their spotted plumage and assume that of the adults.

The tarsus in the *Turdidæ* is plain on both aspects, with the entire laminæ smooth and without scutellations, though in a few instances young birds show a slight tendency to a scute, but this only occurs in a very few species.

Thrushes may be said to be cosmopolitan in their range, and they occur even in the Pacific Islands, where very few forms which flourish in the Palæarctic and Nearctic Regions find a home. In fact, the Thrushes are even more universally distributed over the earth's surface than the Crows. In America, Robins and Chats, Nightingales and Redstarts are wanting, but their places are taken by the Blue-Birds (*Sialia*) and other forms.

The bill in the *Turdidæ* varies considerably in shape, being sometimes flattened and beset with many bristles like a Flycatcher's, but the nostrils are always exposed, not covered with hairs as in the last-named family. There is a slightly-indicated notch near the end of the upper mandible.

The family has been divided by Mr. Seebohm, who has made the *Turdidæ* his special study, into two main groups, one with a white pattern extending across the under surface of the wings, and the second without any such patch. The genus *Oreocichla*, with White's Thrush, and *Geocichla*, with the Siberian Thrush, come under the first heading. All the other Thrushes are divided by him into three sections,—1, the True Thrushes, *Turdus*, in which both male and female are alike in plumage; 2, the Blackbirds, in which the sexes differ in colour; and 3, the Robins, Chats, and Redstarts, in which the sexes may or may not differ in colour, but in which the bill is dark, not pale as in the Blackbird group. Mr. Oates separates the *Turdidæ* into five sub-families, but the characters are somewhat artificial, and we do not agree with his conclusions entirely. (*Cf.* Oates, Faun. Brit. Ind. Birds, ii., p. 57.)

THE GOLDEN THRUSHES. GENUS OREOCICHLA.

Oreocichla, Gould, P. Z. S., 1837, p. 145.

Type, *O. varia* (Pall.).

There is a certain character in the mottled plumage of White's Thrush and its allies which separates them from all the other members of the family, and renders it convenient to recognise them as belonging to a separate genus from *Turdus* and *Merula*. They have the white pattern on the inner face of the wing, as in the Ground-Thrushes (*Geocichla*), and, as in the latter birds, the axillaries are of a different colour from the under wing-coverts. The sexes are alike in colour, and the under surface of the body is "lunulated," with distinct spots or bars. The rictal bristles are few and lateral.

Of the genus *Oreocichla* about a dozen species are known, all of the same peculiar type, and most of them confined to the

Indian and Australian regions, and the species inhabiting these areas are mostly stationary, or at best only slightly migratory within the limits of the regions they inhabit. White's Thrush, which comes to England occasionally, is, on the contrary, a decidedly migratory bird, breeding in Eastern Siberia, and wending its way south in winter to Japan, South China, and the Philippines. It has fourteen tail feathers instead of twelve, as in the majority of Thrushes, a peculiarity which it shares with *Oreocichla horsfieldii* of Java and *O. hancii* of Formosa.

WHITE'S THRUSH. OREOCICHLA VARIA.

Turdus varius, Pall. Zoogr., Rosso-Asiat., i., p. 449 (1811); Macg., Br. B., ii., p. 146 (1839); Newt. ed. Yarr., i., p. 251 (1872); Dresser, B. Eur., ii., p. 77, pl. 10 (1878); B. O. U. List Br. B., p. 3 (1883); Lilford, Col. Fig. Br. B., pt. iii. (1886); Saunders, Man., p. 11 (1889).

Geocichla varia, Seeb., Cat. B. Brit. Mus., v., p. 151 (1881); id. Br. B., i., p. 200 (1883).

Adult Male.—General colour above ochreous-brown, varied with black circular margins to the feathers, all of which have whitish shaft-lines, and a golden-buff subterminal shade; this banded plumage somewhat closer on the head, and the spots smaller; lesser wing-coverts like the back, the median-coverts blackish, with broad ochraceous ends; the greater series blackish, externally paler brown, with slightly indicated buff tips; bastard-wing-feathers light brown; primary-coverts brown at bases, golden-buff in the centre, and black at the ends, forming a well-marked pattern on the wing; quills brown, the primaries light brown at the base, the feathers being here ochreous-brown externally, the centre of the primaries dark brown nearly to the edge, and the pale edge increasing towards the end of the quills; the secondaries blackish with a tip of golden buff, and with an indentation of ochreous-buff on the margin near the end; four centre tail-feathers (fourteen in number) light brown, without pale tips, the rest blackish, externally ochreous-brown, the feathers tipped with white, the outer ones more broadly; sides of face pale ochreous-buff, the feathers edged with black, and a black spot behind the ear-coverts; cheeks white, spotted with black, and having a narrow moustachial line of black; throat white, as also the abdomen and under tail-coverts; the fore-neck, breast, and sides of body with crescent-shaped black edges, before which is a subterminal shade of golden-buff, narrower than on the upper surface; sides of the upper breast light brown with white shaft-lines and the same margins as the rest of the flanks; under wing-coverts black, the axillaries white with the terminal half black; quills dusky brown below, with a broad white band across the base of the inner web of the quills; bill dark brown, paler below; feet yellowish brown; iris dark brown. Total length, 11·8 inches; culmen, 1·1; wing, 6·4; tail, 4·1; tarsus, 1·35.

Adult Female.—Similar in plumage to the male. Total length, 11 inches; wing, 6.0.

Range in Great Britain.—An accidental visitor in late autumn and winter. The species has occurred at least a dozen times or more, most of the captures having been made in England, but one instance is known from Berwickshire, and three from Ireland. The first time that it was met with in England was in 1828, when a specimen obtained in Hampshire was described as *Turdus whitei* by Eyton, who believed it to be a new species, and named it in honour of Gilbert White of Selborne. The title of White's Thrush, thus acquired, has been universally recognised by British naturalists, and may well commemorate the name of an observer of bird-life, than whom no one is more venerated in this country at the present day.

Range outside the British Islands.—White's Thrush is a Siberian bird, breeding in the south-eastern and south-central districts of Siberia, in China north of the Yangtze, and probably in Japan. It winters in Southern China and the Philippine Islands, and it is at the latter season of the year that specimens occur in Europe. The species has been obtained in Norway and Sweden and as far south as Italy and the Pyrenees, but it is in Heligoland that it most frequently occurs, and no one who has visited that island can forget the sight of the beautiful specimens in Gaetke's Museum, all in perfect plumage, and mounted by the hands of the old naturalist himself.

Habits.—Not much has been recorded of the habits of White's Thrush beyond the fact that it seems to be essentially a ground-bird, searching for its food in humid situations, among the dead leaves under the trees and shrubs. Its golden-spangled plumage serves to conceal it, and it seems to frequent in England, when it occurs, similar situations to those it affects in its native home. Its food consists, as with most other Thrushes, of worms and grubs, spiders and snails, and as it is not a noisy species, it may easily be overlooked. In autumn it feeds also on berries. Whether it has a song has never been yet recorded, but such is doubtless the case.

Nest.—The only authentic nest of White's Thrush yet recorded was obtained near Ningpo, in China, by the late Consul Swinhoe, and is now in Mr. Seebohm's collection. He describes it as follows: "It was built on a fork of a horizontal pine-branch, and is about 2½ inches deep inside, and about 4 inches deep outside, 7 inches in outer and 4½ inches in inner diameter. The outside is composed of withered rushes, fine and coarse grass and moss, with an occasional twig and withered leaf, and plastered most copiously with mud. Here and there are a few pieces of some green wood, apparently conveyed in the mud from the swamps. The inside is lined with a thick coating of mud like the nests of our own Ring-Ouzel or Blackbird; and is then finally lined with fibrous rootlets, quite as coarse as those which the Magpie uses, and one or two pieces of sedgy grass. In general appearance the nest resembles most closely that of a Common Magpie without the sticks—just the mere cup, and is far more coarsely made than the nests of the true Thrushes."

Eggs.—These, according to Mr. Seebohm, are greenish-white, with minute reddish spots. They most resemble those of the Mistle Thrush, but the ground-colour is slightly paler, and the spots much finer, more numerous, and more evenly distributed. They measure 1·2 inch in length and 0·9 inch in breadth.

THE GROUND-THRUSHES. GENUS GEOCICHLA.

Geocichla, Gould, Proc. Zool. Soc., 1837, p. 174.
Type, *G. rubecula* (Gould).

The members of this genus are birds of somewhat variegated plumage, differing in the colour of the sexes, and having the same white patch on the inner face of the wing as in *Oreocichla*, but not possessing the golden banded plumage of the latter genus. The axillaries, however, are of the same type as in the Golden Thrushes, being exactly the opposite of the under wing-coverts—*i.e.*, if the under wing-coverts are black with white tips, the axillaries are white with black tips. The *Geocichlæ* are inhabitants of the African, Indian, Eastern Palæarctic, and Malayan Regions. One species from America, *Geocichla nœvia*, is included by Mr. Seebohm in the genus.

THE SIBERIAN GROUND-THRUSH. GEOCICHLA SIBIRICA.

Turdus sibiricus, Pall. Reis. Russ. Reichs., iii., p. 694 (1776); Saunders, Man., p. 12 (1889).

Geocichla sibirica, Seeb., Cat. B. Brit. Mus., v., p. 180 (1881); id. Br. B., i., p. 204 (1883).

Adult Male. — General colour above dark slaty-grey; the feathers paler slaty-grey on the margins; wing-coverts like the back; bastard-wing, primary-coverts, and quills dark brown, externally slaty-grey; centre tail-feathers like the back, the remainder black, washed with slaty-grey on their outer edges, the two outer feathers white at the tips; head a little darker than the back, relieved by a very broad white eyebrow, which extends to the sides of the nape; lores dusky; ear-coverts and sides of face slaty-black; under surface of body slaty-grey, a little more dusky on the throat, and paler on the sides of the body and flanks; centre of breast and abdomen pure white, the under tail-coverts white, mottled with slaty-grey bases; thighs slaty-grey; under wing-coverts black; edge of wing white; axillaries white, with dusky black tips; quills blackish below, the base of the inner webs white, forming a broad band; bill black; tarsus in front, toes and claws greenish-yellow, the hinder aspect of the tarsus dirty yellow; iris brown. Total length, 9 inches; culmen, 0·8; wing, 4·65; tail, 3·1; tarsus, 1·1.

Adult Female.—General colour above warm olive-brown, inclining to slaty-brown on the lower back and rump; wing-coverts russet-brown; quills dusky brown, externally russet-brown, with a pale margin to the first primary; tail-feathers dusky brown, with a russet tinge, the two outer ones with a tiny spot of white at the tip; head a little more russet than the back, the eye-stripe fulvous and not so distinct as in the male; ear-coverts ochreous-buff mottled with blackish edgings to the feathers; cheeks ochraceous with a blackish line above and below, forming a distinct moustachial streak; under surface of body ochraceous, whiter on the throat, which is spotted with dusky; the fore-neck and breast slightly more rufous, and mottled with blackish subterminal bars to the feathers, less marked on the sides of the body and flanks; lower breast and abdomen pure white; thighs brown; under tail-coverts white, with dusky bases; under wing-coverts ochraceous brown; axillaries white with brown tips; quills dusky below with the wing-band buffy-white; "bill dark brown, the lower mandible and gape dirty yellow to the angle of the gape; feet and claws orange-yellow; iris dark brown." (*W. Davison.*) Total length, 9 inches; culmen, 0·8; wing, 4·5; tail, 3·0; tarsus, 1·05.

Young birds of the year may be distinguished by the pale ochre tips to the wing-coverts.

Range in Great Britain.—The late Mr. Frederic Bond possessed a specimen of this bird, which was sold to him by a dealer as a variety of the Redwing, which had been killed between Guildford and Godalming in the winter of 1860-61. Mr. Bond thoroughly believed in its genuineness, and the specimen was one of the few which he wished to come to the British Museum on his death, and which he bequeathed to that institution in his will. Mr. Saunders has reason to believe that a second example was picked up exhausted at Bonchurch, in the Isle of Wight, in the winter of 1874, but he does not consider the evidence good enough to include the species in the British List. After all, however, there is nothing so wonderful in the occasional visit of this bird to Great Britain, as it has occurred in several countries of Europe, and Mr. Seebohm very aptly draws attention to the fact that thirty years ago it would not have been easy for any dealer to have obtained a specimen of the Siberian Thrush, even if he had wished to palm it off as British-killed, so rare was the bird in collections at that date. Again, it must be remembered that this specimen was sold to Mr. Bond, not as a Siberian Thrush, but as a melanistic variety of the Redwing. Under these circumstances we think that the bird has a claim to be admitted into the List of British Birds, as a very rare and occasional visitor.

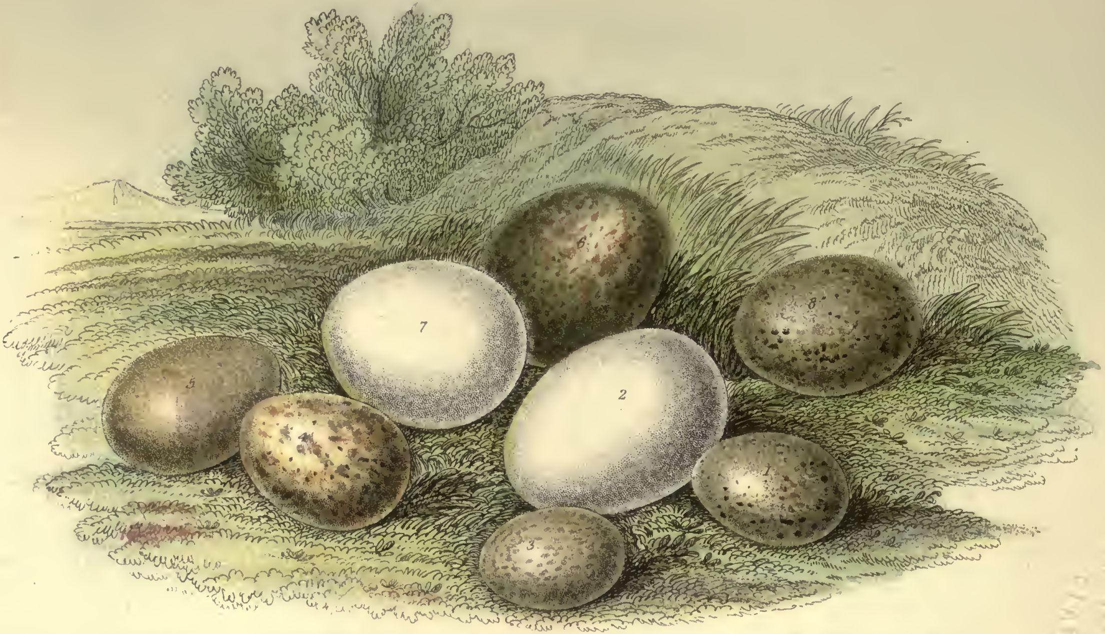
Range outside the British Islands.—The Siberian Ground-Thrush breeds in the valleys of the Lena and the Yenesei, between 67° and 68° N. lat., and also near Yokohama, in Japan. Its winter quarters are in Southern China, Burma, and Tenasserim, and it ranges as far as Sumatra and Java. It also straggles to Europe, for, besides the reputed British occurrence, it has been captured in Germany on more than one occasion, and has been also recorded from France, Belgium, Italy, and Turkey.

Habits.—Scarcely anything has been recorded of the habits of this species. Mr. Seebohm tells how he met with the bird in Siberia, not far from the village of Koorayika, on the Arctic Circle, but it was so shy and wary that he did not succeed in shooting a specimen till the 19th of June. In a dense birch plantation, where the snow had recently melted and had left exposed a dense bed of leaves, the accumulations of some years, he saw a dark bird with a white eyebrow engaged in searching for food amongst the dead leaves. He managed to secure the specimen, which proved to be a Siberian Ground-Thrush, and he also saw others, but could not procure any more examples. The natives told him that it was not uncommon near Toorokansk during the breeding season, and was called the "*Chörnoi Drōzht*," or "Black Thrush." In Japan, Mr. Jouy found it equally shy, frequenting the dense woods on Fuji-yama as high as 5,000 feet. It has a fine song, and is a favourite cage-bird with the Japanese.

Nest.—Not yet described.

Eggs.—A clutch of three eggs are in the Seebohm collection, obtained by the late Harry Pryer in Japan. The ground-colour is bluish-green, and the eggs are spotted all over with reddish-brown, in Blackbird fashion. The underlying spots are slightly lighter brown, but are scarcely distinguishable from the overlying ones. Axis, 1·05 inch; diam., 0·8.

PLATE XXXI.



1. Brambling. 2. Green Wood-pecker. 3. Grey Wagtail. 4. Red-backed Shrike. 5. Hoopoe.
6. Blackbird. 7. Bee Eater. 8. Cuckoo

THE BLACKBIRDS. GENUS MERULA.

Merula, Leach, Syst. Cat. Mamm. and Birds, Brit. Mus., p. 20 (1816).

Type, *M. merula* (Linn.).

The separation of the genus *Merula* from the genus *Turdus* is rather difficult to justify, as in structure the two genera are almost identical, and the character most to be relied on, *viz.*, the difference in the colour of the sexes, is not found to exist in a few species, which, nevertheless, must be considered to belong to the "Blackbird" group of *Turdidæ*. As far as the European species are concerned, however, the distinctions are well marked, and the difference in the colour of the sexes separates the Blackbirds from the Thrushes. They resemble the latter in not having the white pattern on the inner face of the wing, and are thus easily distinguished from *Oreocichla* and *Geocichla*. The members of the genus *Merula* are distributed over the Palæarctic, Indian, and Australian regions, being confined in the latter to various Pacific Islands. In the Neotropical Region nearly twenty species occur, but the genus is unrepresented in the Nearctic Region.

THE BLACKBIRD. MERULA MERULA.

(*Plate XXII.*, *Fig.* 2.)

Turdus merula, Linn., Syst. Nat., i., p. 295 (1766); Macg., Br. B., ii., p. 81 (1839); Newt. ed. Yarr., i., p. 280 (1872); Dresser, B. Eur., ii., p. 91, pl. 13 (1872); B. O. U. List Br. B., p. 4 (1883); Lilford, Col. Fig. Br. B., pt. vii. (1888); Saunders, Man., p. 13 (1889); Wyatt, Br. B., pl. i., figs. 3-4 (1894).

Merula merula, Seeb., Cat. B. Brit. Mus., v., p. 235 (1881); id. Br. B., i., p. 235 (1883).

Adult Male.—Entirely black above and below, and including the wings and tail; bill orange-yellow; feet and claws dark brown or black; iris hazel; eyelid orange. Total length, 10·5 inches; culmen, 0·9; wing, 5·0; tail, 3·8; tarsus, 1·3.

Adult Female.—Differs considerably from the male, being browner, and mottled underneath. The general colour is blackish-brown, washed slightly with dark olive; the tail black; ear-coverts dark brown, with pale shaft-lines; throat and chest rufous, mottled with black, the feathers having longitudinal black centres, widening out at the ends; breast and rest of under surface of body blackish.

With age, the female bird becomes much greyer, especially underneath, when the breast and abdomen are hoary-grey, the throat whitish, regularly streaked with rows of brown spots; the chest pale rufous. The bill in old birds inclines to yellow.

Young.—Rufous-brown, mottled with pale rufous centres to the feathers of the upper parts, imparting a streaked appearance, less distinct on the head; the median and greater coverts like the back, and similarly streaked; greater-coverts chocolate-brown; bastard-wing, primary-coverts, and quills blackish-brown; lores rufous-brown; ear-coverts dark brown, with hair-like shafts of rufous; cheeks and under surface of body reddish-buff, the throat spotted with blackish-brown at the tips of the feathers, the breast and sides of the body barred with blackish-brown; breast and abdomen uniform pale rufous; thighs brown; under tail-coverts black, with rufous tips.

At first both male and female are alike, but the darker colour of the former is shown after the autumn moult, when, however, there are still some rufous mottlings on the throat and chest. The bill also is black, and even when the birds gain their entire black plumage, the young of the previous year can always be recognised by the browner wings.

Range in Great Britain.—Generally distributed and breeding everywhere throughout the three kingdoms, but only known as an autumn and winter visitor to some of the Outer Hebrides and the Shetland Isles. It is said to be gradually extending its range northward in Scotland.

Range outside the British Islands.—Almost universally met with throughout Europe, and inhabiting the whole of the countries on both sides of the Mediterranean from Palestine on the east to the Azores, the Canaries, and Madeira on the west. The northern range of the Blackbird in Scandinavia extends up to the Arctic Circle, about 67° N. lat., but it has not yet been found in Northern Russia, where its range is said to be bounded by the valley of the Volga. Further east, in Turkestan, Afghanistan, and Cashmere, its place is taken by a larger race, *Merula maxima*, which has a wing of 5½ or 6 inches.

Habits.—Except in spring-time, when the Blackbird is seen and heard more frequently than at other times of the year, it is a shy and retiring bird, seeking its food among the dead leaves in thickets and hedgerows, or inhabiting the evergreen shrubberies. Its well-known chattering note as it flies away, when startled, is familiar to everyone, as also are the beautiful flute-like notes, which are heard on all sides at the commencement of the nesting season. In England the Blackbird does not seem to be found so much in the centre of the towns as it is in some of the Continental cities, but it is a frequent denizen of the suburbs, and may often be seen in the London parks. It is to a certain extent migratory even in England, and large numbers come from the Continent every autumn, while on the south coast we have noticed many together in September, evidently about to cross the Channel, and we have seen at least a dozen fly out of a little patch of reeds in a ditch, where they had been feeding in company. With such exceptions, the Blackbird cannot be called gregarious, and, as a rule, each bird seems to feed on its own account, and flies off separately, when disturbed.

The food of the Blackbird consists chiefly of insects and worms, but it also devours numbers of small snails, breaking the shells by repeated blows against a stone or on the ground. It is also a well-known pilferer of fruit, and undoubtedly does some damage in this respect, a crime which is never atoned for in the eyes of the gardener by the good which it does in destroying numbers of grubs and insects during the rest of the year. To the ordinary individual, however, the sight of the bird and the pleasure of hearing its tuneful song at all hours of the day, amply atone for any harm which it may do in the fruit-gardens, and we know several friends who will not have the birds disturbed or their nests harried in their grounds, holding that they are welcome to some of the fruit, in return for the charm which their presence affords. In a circumscribed area, however, it is quite possible for the Blackbird to be somewhat of a nuisance, for it is extremely quarrelsome, not only fighting with others of its own species, but driving off other birds which seek to feed or to nest near its own particular domain. In most places, however, where the birds are cared for, they live in peace with the Thrushes and other neighbours, remembering perhaps that they have shared the same friendly hospitality during the hard days of winter, and been sustained by the same friendly hands. Thus there is no prettier sight than to see the Blackbirds in summer descending gently and with a sweeping flight on to a lawn, and as they alight, raising their tail gracefully, before proceeding to search for worms. This action of the tail is characteristic of the Blackbird, and is not seen in the Thrushes under similar circumstances.

Nest.—This is found in all kinds of situations, sometimes well concealed and hidden in the recesses of an evergreen or yew-tree, at others built in such exposed situations as to ensure discovery. The outside of the nest is often ragged, and the outlying grasses and twigs often lead to its detection. It is a firm and compactly-built structure, and is placed in the thick stems of an ivy trunk or against the trunk of a big tree, often in the middle of a park or on the edge of a plantation, and at a good distance from the ground, while at other times it is to be found near the dense bottom of a hedge-row, and has even been found under the eaves of a shed, or amongst the roots of a large tree, or under a bank, in just such a situation as a Wren would choose, according to Mr. Seebohm. The latter gentleman observes: "The nest passes through three stages before it is completed. It is composed first of coarse grasses, amongst which a few twigs are sometimes woven, a little moss, and dry leaves. This somewhat loosely-built structure is lined with mud or clay, when it is a difficult matter to distinguish it from an unfinished nest of the Song-Thrush. This mud-formed cavity is finally lined very thickly with finer grasses, admirably arranged, and forming a smooth bed for the eggs." Mr. Robert Read tells us that he once found a Blackbird's nest at Blackheath very early in the spring, in which the bird had laid a single egg. A spell of frost and snow supervened, and no more eggs were deposited for a fortnight, when mild weather once more set in, and two more eggs were laid precisely similar to the first, and evidently by the same bird

Eggs.—From four to six in number. The eggs vary to any extent in colour and shape. The ground-colour is greenish-blue and the overlying markings are reddish-brown, arranged as spots or blotches, sometimes so thickly that the egg appears reddish, but the blotches are often collected at the larger end. From this type of egg, which is the ordinary one, every variation seems to take place, some eggs being so minutely spotted with reddish-brown as to recall those of the Jay, while not unfrequently they are so sparsely spotted as to appear almost entirely blue, and are sometimes actually blue. Those in a clutch from Waterford, in the Seebohm collection, have the ground-colour white instead of blue, and the markings light reddish-brown. (Plate xxxi., fig. 6.)

THE RING OUZEL. MERULA TORQUATA.

Turdus torquatus, Linn., Syst. Nat., i., p. 296 (1766); Macg., Br. B., ii., p. 100 (1839); Newt. ed. Yarr., i., p. 287 (1872); Dresser, B. Eur., ii., p. 113, pls. 14, 15 (1872); B. O. U. List Br. B., p. 5 (1883); Lilford, Col. Fig. Br. B., pt. i (1885); Saunders, Man., p. 15 (1889).

Merula torquata, Seeb., Cat. B. Brit. Mus., v., p. 246 (1881); id. Br. B., i., p. 243 (1883).

Adult Male.—General colour above sooty-black, the lesser wing-coverts like the back; median and greater coverts, primary-coverts, and quills brownish-black, with narrow fringes of ashy on the outer web, scarcely visible on the bastard-wing feathers, which are blackish; tail-feathers blackish-brown, with a slight fringe of whitish at the tips of the feathers; sides of head, throat, and under surface of body sooty-black, with narrow whitish margins to the feathers of the breast and abdomen, thighs and under tail-coverts; across the fore-neck a broad band of white, slightly shaded with brown, and reaching to the sides of the neck; under wing-coverts and axillaries ashy-brown, barred with dull white at the ends and towards the tips of the feathers; quills dusky below, ashy along the inner webs; bill yellow; feet and claws brown; iris dark brown.

Total length, 10 inches; culmen, 0·9; wing, 5·4; tail, 3·8; tarsus, 1·3.

Adult Female.—Rather browner than the male, and having faint remains of pale margins to the feathers of the upper surface; the under surface more distinctly varied than in the male, and not so uniform, the feathers edged with ashy-white on the throat as well as the breast; the white gorget overshaded with brown margins to the feathers. Total length, 10 inches; wing, 5·3.

Young birds after the autumn moult are thickly covered below with greyish-white margins to the feathers, the white gorget being almost obscured with brown, especially in the young females.

Nestlings.—Blackish, with obscure reddish-brown edgings to the feathers, and the wing-coverts streaked down the centre with white; there is no indication of a chest-band, the chest being black, the feathers edged with sandy-buff; the breast and abdomen barred with black and buffy-brown or white; the throat clear buff, spotted with black.

Range in Great Britain.—A summer visitor only, inhabiting the hilly districts of all three kingdoms, from Cornwall to Somersetshire, and found throughout the higher ground of England and Wales, and almost the whole of Scotland and the outlying islands, except the Shetlands, which it only visits on rare occasions.

Range outside the British Islands.—Until quite recently there was believed to exist but one species of Ring-Ouzel in Europe, but the attention of ornithologists having been drawn by Dr. Stejneger to the fact that the Ring-Ouzel of the Alps and mountains of Central Europe was really a distinct species from the bird which breeds in England and Scandinavia, this subject was investigated by Mr. Seebohm and Count Salvadori. Both of them confirm the distinctness of the southern bird, which must be known as *Merula alpestris*, Brehm, while Mr. Seebohm considers the Ring-Ouzel of the Caucasus to be still further different, and to be worthy of separation as *Merula orientalis*.

The Ring-Ouzel which visits Great Britain in summer is, therefore, found on the continent in Scandinavia up to about

58° N. lat., and breeds also in Northern Germany, on this side of the Riesenberge and Silesia, and it is probably our bird which nests in Guelderland in Holland and in Southern Belgium. Mr. Seebohm likewise considers that the Ring-Ouzel of the Vosges mountains will be found to be *M. torquata;* but as Mr. Howard Saunders found *M. alpestris* in the Jura, nesting at a height of from fifteen to forty feet, the bird of the Vosges will certainly be the same as that of the Jura. The latter form, which is distinguished by white centres to the feathers of the under parts (in addition to the white margins) is found in the Alps and the Apennines in Italy, and breeds in suitable places in Germany south of the Riesenberge and Silesia. In Transylvania Mr. Danford has found its nest not near the ground, but at a height of forty feet in a tree, so that the habits of the Alpine Ring-Ouzel evidently differ from those of its northern ally. It is probably *M. alpestris* which breeds in the Pyrenees and the mountains of Spain, but whether it is *M. torquata* which extends east to the Urals can only be determined by an examination of specimens. In winter our bird appears to visit the countries of the Mediterranean and shares the winter-home of *M. alpestris.*

Habits.—The Ring-Ouzel is a bird of the moors and fells, and is rarely seen in the south-east of England, except during its migrations, when it is often to be observed near Brighton in the gardens near the town, resting for a short time on its southern journey. In most of its habits the Ring-Ouzel resembles the Blackbird, and has the same habit of elevating its tail, when it alights on the ground or perches. The song is also a harsh echo of the Blackbird's, though it is said to resemble those of the Starling and Song-Thrush in a certain degree; it is, however, inferior to that of both the Blackbird and Song-Thrush, and contains many rough notes not uttered by the two birds last-named. The food of the Ring-Ouzel consists of worms, snails, and beetles, while in autumn it feeds on all kinds of berries in its northern home and harries the vineyards of the countries through which it passes on its way south. In Heligoland at the end of September we found the Ring-Ouzel passing in some numbers, and they were plentiful for a few days in the bushes and grass on "Sandy" Island. They were very shy and not easily induced to fly. Some of them, on being disturbed more than once, mounted high into the air and flew straight away towards the coast of Germany.

Nest.—A compactly-built structure, formed exactly on the same lines as a Blackbird's, and built gradually, in the same way. There is, in fact, nothing by which the nest can be identified from that of the ordinary Blackbird, except its situation, which is generally different from that of the last-named bird. The Ring-Ouzel generally places its nest on the ground, but also in bushes of heather or ling, especially on banks where the heather conceals it. Occasionally a hole in a rock is selected.

Eggs.—Four or five in number. Mr. Robert Read tells us that in Scotland he has never found more than four in a nest, though in the north of England six are often met with. The eggs are generally like those of the Blackbird, but are more richly marked, and with a clearer blue ground. Equal variation in markings takes place to that which obtains in a series of Blackbird's eggs. In some the ground-colour is pale bluish, with the reddish markings small and distributed over the whole egg. Others are brighter blue, and these have the markings generally larger, and in the form of blotches. Others have the ground-colour greenish-olive, and in these, again, the reddish markings are large. Only a few eggs have a collection of spots at the larger end, and in all the underlying spots are never prominent, being of a lighter reddish-brown colour. Axis, 1·1–1·3 inch; diam., 0·8–0·9.

THE BLACK-THROATED OUZEL. MERULA ATRIGULARIS.

Turdus atrogularis, Temm., Man. d'Orn., i., p. 169 (1820); Newt. ed. Yarr., i., p. 276 (1872); Dresser, B. Eur., ii., p. 83, pl. 11 (1878); B. O. U. List Br. B., p. 2 (1883); Lilford, Col. Fig. Br. B., pt. ii. (1886); Saunders, Man., p. 9 (1889).

Merula atrigularis, Seeb., Cat. B. Brit. Mus., v., p. 267 (1881); id. Br. B., i., p. 249 (1883).

Adult Male.—General colour above light olive-brown, the wing-coverts like the back; bastard-wing, primary-coverts and quills dusky-brown, externally washed with olive-brown, more broadly on the inner secondaries, where the olive colour occupies the outer web and forms a contrast to the dark brown of the inner web; all the quills with pale fringes at the tips, more distinct on the inner secondaries; the primaries edged with ashy towards the end of the outer web; tail-feathers dark brown, with pale fringes to the tips; crown of head more ashy-olive than the back, with the centres of the feathers rather darker; lores, feathers in front of and below the eye, fore part of cheeks, throat and chest black; the ear-coverts and hinder cheeks dark ashy-olive, like the sides of the neck, the latter slightly mixed with black; breast and abdomen white, the sides of the body and flanks greyish, with a few dusky streaks on the sides of the upper breast; thighs light ashy-brown; under tail-coverts white, with brown bases; axillaries and under wing-coverts rich chestnut, the former edged with white; edge of wing white; lower primary-coverts dusky, like the under surface of the quills, which are reddish along the inner web; bill blackish-brown, dusky yellow at the base of the lower mandible; feet and claws greyish-brown; iris blackish-brown. Total length, 10 inches; culmen, 0·8; wing, 5·4; tail, 3·7; tarsus, 1·25.

Adult Female.—Different from the male, and lacking the black on the face, throat, and chest; ear-coverts and sides of face ashy-olive, with a faint whitish eyebrow; cheeks and throat white, with dusky blackish spots on the cheeks, sides of throat and fore-neck; breast and sides of body ashy-brown, streaked with dusky brown; axillaries and under wing-coverts orange-chestnut. Total length, 9 inches; wing, 5·1.

Range in Great Britain.—A very rare visitor, having only been identified once, when a young male was shot near Lewes on the 23rd of December, 1868, and passed into the collection of Mr. T. J. Monk. As the species has been several times obtained at various places on the continent of Europe it may occur more frequently in the British Islands than has been generally supposed.

Range outside the British Islands.—The Black-throated Ouzel is a Siberian bird, breeding in the valley of the Yenesei, and

Mr. Seebohm thinks, in that of the River Ob also. It also nests on the Altai mountains, and in the mountains of Eastern Turkestan, and probably in the higher portions of the Himalayan chain. In winter it is found plentifully in the latter range as far as Assam, and occurs at this season of the year in Afghanistan and Baluchistan, as well as in Eastern Turkestan. It is on its autumn migration that it wanders into Europe, where it has been obtained in several countries, Russia, Denmark, Germany, Belgium, France, and Italy.

Habits.—As might be expected, little has been recorded of the habits of this Ouzel. Mr. Seebohm writes: "I met with it twice in the valley of the Yenesay, on my return journey from the Arctic Regions, between 60° and 63° N. lat., early in August. I found it a very noisy, active bird. I was too late for the eggs, but the not fully-fledged young, three of which I secured, were a source of great anxiety to their parents, whose alarm-notes resounded on the skirts of the forest on every side. They principally frequented the neighbourhood of the villages on the banks of the river, where the forest had been cut down for firewood, and clumps of small trees were scattered over the rough pastures, where the cattle of the peasants are turned out to graze in the summer. They showed a marked preference for the pines, and were very wary. The males kept out of gunshot, and I only secured one adult bird, a female. In its winter home it frequents a variety of situations, affecting in Eastern Turkestan, according to Dr. Scully, the trees lining the watercourses or growing near tanks, or it may be seen amongst the sand-hills and scrub-jungle. In India it is found in the more open woods at a level of from 3,000 to 8,000 feet, or it may be seen in the roads and pathways. Near Gwadar, in Baluchistan, Mr. Blanford found it frequenting the miserable apologies for gardens in that 'most desolate of inhabited spots on the earth's surface.' The food of this Thrush consists of worms and insects, and doubtless small snails, varied in autumn and winter with a diet of fruit and berries. In Eastern Turkestan it is known as the 'Jigda-churr, or 'Jigda-eater,' as Dr. Scully informs us, from its feeding on the *Eleagnus* berries, known as 'Trebizond dates,' and called 'Jigda' in Turki."

Nest.—Not yet described.

Eggs.—These are stated to be similar to and to vary as much as those of the Blackbird, and measure 1·15–1·2 inch in length, and from 0·75–0·8 in breadth.

THE TRUE THRUSHES. GENUS TURDUS.

Turdus, Linn., Syst. Nat, i., p. 291 (1766).
Type, *T. viscivorus*, Linn.

The birds which constitute the genus *Turdus* number among them the Thrushes best known to us, such as the Song-Thrush, and Mistle-Thrush, the Redwing, and the Fieldfare. In all of these species of the genus the sexes are alike in plumage, and the breast is spotted, while the young birds are also spotted on the back. This spotted back is lost after the first autumn moult, when the plumage is like that of the old birds, the only sign of immaturity being seen on the wing-coverts, which have a slight indication of a pale spot at their ends. Rictal bristles are evident, and the tarsus has both its laminæ smooth, though in some young birds there is a tendency to a division by a single scale or two. The True Thrushes are plentifully represented in the Neotropical Region, fairly so in all other regions except the Indo-Malayan sub-region and the Australian region, where no True Thrushes occur.

THE REDWING. TURDUS ILIACUS.

Turdus iliacus, Linn., S. N., i., p. 292 (1766); Macg., Br. B., ii., p. 141 (1839); Newt. ed. Yarr., i., p. 268 (1872); Dresser, B. Eur., ii., p. 35, pl. 3 (1872); Seeb., Cat. B. Brit. Mus., v., p. 189 (1881); id. Hist. Br. B., i., p. 220 (1883); B. O. U. List Br. B., p. 2 (1883); Lilford, Col. Fig. Br. B., pt. i. (1885); Saunders, Man., p. 5 (1889).

Adult Male.—General colour above olive-brown, the lesser wing-coverts like the back; the median and greater coverts darker brown, edged with lighter brown, and tipped with buffy-white, more distinctly on the latter, the inner greater coverts margined with reddish-brown; bastard-wing dark brown; primary-coverts and quills dark brown, edged with lighter and more ashy-brown, with narrow whitish fringes near the tips; tail-feathers light olive-brown, shaded with ashy on the middle feathers, and showing obsolete cross-bars under certain lights;

head a trifle darker than the back, with a distinct eyebrow of white, inclining to buffy-white above the ear-coverts; lores, sides of face, and ear-coverts dark brown, streaked with buff below the eye and on the centre of the ear-coverts, which have pale shaft-streaks; cheeks dull white, spotted with dark brown, and widening into a patch on the sides of the neck, which incline to golden-buff; a very distinct moustachial line of blackish-brown; under surface of body dull white, spotted with dusky brown on the chin, streaked on the upper throat very distinctly, but more broadly on the fore-neck, breast, and sides of the body; on the lower throat a white space; centre of breast, abdomen, and under tail-coverts, dull white, unspotted, but the latter with concealed brown centres; sides of body washed with rich chestnut; under wing-coverts entirely of this colour; quills dusky below, ashy along the edge of the inner web; bill dark brown, the lower mandible dull yellow towards the base; feet and claws yellowish-brown; iris brown. Total length, 8·5 inches; culmen, 0·7; wing, 4·45; tail, 3·1; tarsus, 1·1.

Adult Female.—Similar to the male. Total length, 8 inches; wing, 4·3.

During the **breeding season** the light edges to the wing-coverts become abraded, and the spots on the breast become more distinct, as the edges of the feathers are worn off.

Young.—Resembles the adult, but has some pale tips to the median and greater wing-coverts.

NOTE.—It seems rather absurd that the Redwing should be confounded with the Song-Thrush, but that this is frequently done, we can bear witness from the number of instances in which the latter bird has been brought to us at the British Museum during the last twenty years, to prove that the Redwing really nests in this country. It may, therefore, be pointed out that the Redwing has a broad white eyebrow and dark brown ear-coverts, and has the sides of the body and the under wing-coverts and axillaries *ruddy chestnut*, and not *golden buff* as in the Song-Thrush.

Range in Great Britain.—A regular autumn and winter visitant, arriving sometimes as early as the month of August, and staying till March or early in April. The male described above was obtained by the late Henry Swaysland, near Brighton, on the 10th of April, 1883—a very late sojourn. In winter, it gradually spreads over the three kingdoms as the season advances, arriving on the east coast from Scandinavia and then spreading westwards.

Range outside the British Islands.—The Redwing breeds throughout the greater part of the northern Palæarctic Region, from Norway to the valley of the Yenesei, east of which it becomes rare. Mr. Seebohm fixes the limit of its breeding range as the 110° meridian. In Scandinavia it breeds up to the Arctic Circle, and in the Petchora Valley up to 68°. Mr. Seebohm also found it in the Yenesei Valley, about lat. 71°, nesting on the ground beyond the limit of forest growth. It has been found by Mr. Hartert breeding in Eastern Prussia, and has been said to nest in Poland, Austrian Galizia, and in the Harz Mountains. To the westward the Redwing breeds in Iceland, and has straggled even as far as Greenland; it has also been known to breed on the Faeroe Islands, but all the supposed instances of its nesting in England may be set aside as not authenticated. In winter the bird wanders far, to the Mediterranean countries and North Africa, visiting also Southern Russia, Persia, and apparently North-western India, while in Siberia it reaches Lake Baikal.

Habits.—In winter the Redwing is a common object in this country, and has all the manners of a Song-Thrush, excepting that it is gregarious, arriving in flocks, and remaining in parties during the whole of the cold season. These frequent the pastures, when there is no snow to prevent their feeding, and there they may be seen running along like a Thrush, and ever and anon stopping, after a short run, to listen. As a rule the Redwings are very shy, and are not easily approached in mild weather, as one or two sentinels are posted on the topmost branches of the bare trees, and on the smallest alarm the whole flock flies up and settles on the top of a tree, whence the birds fly off one by one, uttering their single whispering note as they go. It is very seldom that they are heard to sing in this country. The Redwing suffers much from a continuance of cold weather, when the berries, to which it turns for food, become exhausted, and numbers perish of cold and starvation. They do not thrive on the food placed out for the other Thrushes and Blackbirds, although, in their distress, they become very tame, and we remember a little flock of eleven birds coming to the kitchen-door of our house at Chiswick a few winters ago, for several days in succession. Several of them were caught, with their breast-bones nearly through their skin, but all efforts to keep them alive failed. The bird seems to be less able to accommodate itself to a diet of berries than the Mistle-Thrush and the Fieldfare, though we have known them, when hard-pressed, to feed on holly- and ivy-berries.

In its breeding haunts the Redwing is a very interesting bird, and though not nesting in colonies, it is generally to be found along with the Fieldfares, which do breed in numbers together. The nest is generally placed on a small fir-tree, close to the stem and not far from the ground; sometimes it is placed actually on the latter, as is always the case in the Siberian "tundra" beyond the limit of forest-growth. In the latter locality it breeds as late as the middle of July, but further south generally early in June.

Nest.—This, according to Mr. Seebohm, passes through three stages of construction, like that of all Thrushes. He says: "The birds form a loose nest of moss, dry grass, and a few fine twigs intertwined, the better to bind the materials together. This structure is then lined and plastered with mud or clay, and finally a thick lining is made of fine dry grass, and sometimes a few rootlets. It is neatly made, and somewhat resembles the nest of the Ring-Ouzel, though it is smaller and perhaps more firmly put together.

Eggs.—From four to six in number. These are easily distinguished by their small size. Axis, 0·95–1·05 inch; diam., 0·7–0·8. The ground-colour is bluish-green, but is much concealed by the clouding of the reddish markings which cover nearly the whole of the egg. Occasionally the spots and blotches are larger, and the eggs then resemble those of a small Blackbird. Some eggs have such a uniform appearance as to appear almost entirely olive, while there is also an appearance of pencilled lines at the larger end.

THE SONG-THRUSH. TURDUS MUSICUS.

(*Plate XXII., Fig.* 1.)

Turdus musicus, Linn., Syst. Nat., i., p. 292 (1766); Macg., Br. B., ii., p. 127 (1839); Dresser, B. Eur., i., p. 191, pl. 2 (1871); Newt. ed. Yarr., i., p. 264 (1872); Seeb., Cat. B. Brit. Mus., v., p. 191 (1881); id. Br. B., i., p. 213 (1883); B. O. U. List Br. B., p. 1 (1883); Lilford, Col. Fig. Br. B., pt. i. (1885); Saunders, Man., p. 3 (1889); Wyatt, Br. B. pl. i., fig. 1 (1894)

Adult Male.—General colour above olive-brown; the lesser wing-coverts like the back; median and greater coverts, as well as the quills, dark brown, externally ochraceous-brown, with yellowish-buff tips to the coverts, distinct on the median series, but less marked on the greater coverts; bastard-wing feathers and primary-coverts blackish at the ends; the primary-quills lighter near the base of the outer webs; tail-feathers ruddy-brown; head like the back, the eyelid and lores buff; ear-coverts ochreous-brown, streaked with buffy-white and tipped with black; cheeks buffy-white, minutely spotted with black, which forms a line above and below, the latter indicating a moustachial line; throat white, tinged with golden-buff; fore-neck, chest, and sides of body bright golden-buff, thickly marked with triangular or ovate spots of black, which become larger and more streaked on the sides of the body; centre of breast, abdomen, and under tail-coverts white, the latter with olive-brown margins; flanks washed with olive-brown; thighs ochraceous-buff; under wing-coverts and axillaries deep orange; quills dusky below, ochreous along the inner web; bill dark brown, pale towards the base of the lower mandible; feet pale yellowish horn-colour; iris brown. Total length, 9 inches; culmen, 0·75; wing, 4·5; tail, 3·2; tarsus, 1·2.

Adult Female.—Does not differ in plumage from the male. Total length, 8·5 inches; wing, 4·4.

Young.—More rufous than the adults, and having the feathers of the upper surface and the wing-coverts broadly edged with golden-buff: there is a spot of golden-buff on the ear-coverts and the yellow of the under parts is much deeper and the spots smaller than in the adults.

Range in Great Britain.—Breeds everywhere throughout the British Islands, but has not yet been known to nest in the Shetlands. The birds from the Outer Hebrides are said to be smaller and darker than those from the mainland. In autumn a considerable migration of Thrushes takes place, many of our home-bred birds moving southward, while many more visit us from the Continent.

Range outside the British Islands.—Breeds generally throughout the Palæarctic Region to the valley of the Yenesei. In Norway it is found slightly beyond the Arctic Circle, but in Siberia it only occurs up to about lat. 60°. In the Jura, the Pyrenees, and Northern Spain, the Song-Thrush breeds high up in the mountains, but in Southern Europe it is better known as a winter visitor: it also winters in North Africa, but is said to have occurred as far south as Nubia. To the eastward it comes in winter to the Persian Gulf. In Northern and Western China it is replaced by *Turdus auritus*, which differs slightly in colour and has the second primary shorter than the sixth, whereas in *T. musicus* it is longer than the fifth.

Habits.—With the exception of the Robin and the Blackbird, the Song-Thrush is probably the most familiar species to all people in these islands, for it is not only found universally, but is such a general favourite that it is everywhere prized as a cage-bird. There is scarcely any excuse, however, for keeping this pretty songster in a cage, for it is so common that its song can be heard in every kind of situation throughout the country, and is much more freely given in the wild state. It is, in the opinion of most people, by far the finest songster that we have, for, if it lacks the richness of tone of the Nightingale and some of the Warblers, the song is far more sustained and varied. The clever attempt of Macgillivray to put its song into words is familiar to most of my readers, and need no longer be reproduced, and though this is one of the best word-imitations of a bird's song ever published, it does not give a full idea of that of the Thrush, for the simple reason that the bird never sings its song in the same order consecutively. When the winter season shows its first signs of passing away, the Thrush begins to sing, and very soon the pair of birds are busy with their nest, so that it is not uncommon to see young birds by the end of March or the beginning of April. Cold weather ensuing stills the bird's song, and during a rainless spring it is to be heard less frequently, as the birds find sufficient employment in seeking food for the young. They will quarter a lawn from end to end in search of worms, often the two parent birds in company, and it is amusing to see how one will copy the actions of the other. When one runs a few steps and halts, the other bird follows suit. After a little run, they wait with their head on one side, listening attentively, and then with a sudden bound they seize a worm and drag it out. The next process is to break the worm up, and when this is successfully accomplished the parent flies off to the nest to feed the youngsters. As soon as the latter can fly, they accompany the old birds and dog their footsteps, till their pertinacity must be somewhat of a nuisance; but it is a pretty sight to see an old Thrush teaching one of its progeny to pick up a worm for itself. Having drawn the unwilling prey from the grass and broken it up so that there is no fear of its crawling away, the old bird places it before the young one, and pecks at the worm to show the latter how to take it up for itself. It then taps the bill of the youngster and lays the worm again in front of it, till the little one begins to feed itself.

Both male and female sit upon the eggs, but the chief share falls to the female, and often, when she comes off to feed, the male bird drives her back to the nest, as is done also both by Blackbirds and Starlings, especially by the latter bird. When the young are first hatched, both male and female are indefatigable in searching for food for them, and this business occupies so much of their time that the male has no leisure to sing until the evening,—unlike the Blackbird, who varies his marital duties by an occasional song, challenged thereto, maybe, by the notes of a rival cock-bird in a neighbouring wood or garden; but even then his beautiful mellow notes are spoiled by a sudden break off into a subdued cackle or a cat-like "mew." Not so with the Thrush. When he sings he means business, and a spring shower is enough to make every Thrush forget the cares of his family, and betake himself to the branch of a tree to sing lustily for a considerable time.

The Song-Thrush is a tame and confiding bird, and does not forget the friends who feed and protect it during the winter. Like the Starling, it keeps to the vicinity of the houses where food is provided for it during the hard weather, and makes its nest in the adjoining trees or ivy. When the young are able to fly, they accompany the parent birds and feed on the lawns and paths. They devour numbers of insects, worms, and especially snails, the shells of which they break against a stone or on the hard ground, apparently selecting a special spot for this purpose. In the autumn, like other Thrushes, they feed largely on fruit.

Nest.—This is a bulky structure, with a lining quite different to that of the Blackbird's nest. It is composed of grass, with a little moss and twigs; it is then thickly coated inside with mud or clay, to which is finally added a second lining of decayed wood. This is applied in a wet state, and is smoothed by the pressure of the bird's body, and sometimes even before it is dry the eggs are laid, but generally a day or two are allowed to elapse for the nest to dry before the eggs are deposited.

Eggs.—From four to six in number. Their beautiful blue colour is well known to everyone, and the eggs are spotted with purplish-brown or black, more rarely with reddish-brown. Eggs without spots are not uncommon, and in the British Museum are two eggs which have the ground-colour china-white with rufous markings. Axis, 1·05–1·2 inch; diam., 0·8–0·9. Our friend Mr. Robert Read tells us that he once found eight eggs in a wood at Durham, which from their colour he judged to be the product of two females, as there were two sets of four each. He has found four spotless eggs and one normal one in the same nest. The occurrence of the eight eggs together apparently laid by two hen-birds is interesting, as it is known that occasionally the birds build two nests in conjunction. (Plate xxx., fig. 1.)

THE MISTLE-THRUSH. TURDUS VISCIVORUS.

Turdus viscivorus, Linn., Syst. Nat., i., p. 391 (1766); Macg., Br. B., ii., p. 114 (1839); Dresser, B. Eur., i., p. 3, pl. 1 (1871); Newt. ed. Yarr., i., p. 258 (1872); Seeb., Cat. B. Brit. Mus., v., p. 194 (1881); id. Br. B., i., p. 207 (1883); B. O. U. List Br. B., p. 1 (1883); Lilford, Col. Fig. Br, B., pt. i. (1885); Saunders, Man., p. 1 (1889); Wyatt, Br. B., pl. i., fig. 2 (1894).

Adult Male.—General colour above ashy-brown, the lower back, rump, and upper tail-coverts washed with ochraceous-buff, the latter only on the margins; lesser wing-coverts like the back; median and greater coverts darker brown, the former tipped, the latter edged with dull white, inclining to buff on the inner greater coverts; bastard-wing, primary-coverts, and quills dark brown, edged with ashy-whitish; tail-feathers light brown with ashy margins, all but the centre tail-feathers with a white spot at the end of the inner web, increasing in extent towards the outermost feather, where it is very large; head grey like the back; lores and eyelid white; feathers below the eye and ear-coverts ochreous-buff, the feathers tipped with black and forming a line on the upper ear-coverts; cheeks, throat, and under surface of body clear ochreous-buff, spotted with triangular tips to the feathers, forming a line above and below the cheeks; the throat scarcely spotted, and the tips to the feathers of the breast and sides of body rounded; the lower abdomen, thighs, and under tail-coverts buffy-white without spots, the under tail-coverts edged with dusky brown; axillaries and under wing-coverts white; quills ashy below, white along the inner webs; bill dark brown, yellower at the base of the lower mandible; feet and claws yellowish or yellowish-brown; iris dark brown. Total length, 10·5 inches; culmen, 0·85; wing, 6·0; tail, 4·0; tarsus, 1·35.

Adult Female.—Similar to the male in plumage, but less richly spotted. Total length, 10·5 inches; wing, 5·85.

Young.—Not so largely spotted below; the throat white without spots; upper parts streaked with buff centres to the feathers, which have black tips; the wing-coverts broadly edged with buff, and having a triangular spot of the same colour at the ends. Young birds after their autumn moult may be told by their having somewhat larger buff tips to the median wing-coverts.

Range in Great Britain.—Generally distributed throughout the British Islands, and gradually increasing its range northwards in Scotland and the islands, in districts where it was at one time quite unknown. It is only met with as a straggler in the Orkneys, and has not yet been recorded from the Shetlands. A considerable migration to our eastern coasts takes place in the autumn.

Range outside the British Islands.—Found almost everywhere in Europe, extending in Scandinavia up to the Arctic Circle, and in Siberia it reaches Lake Baikal. In Central Asia and the Himalayas the Mistle-Thrushes are somewhat larger and paler in colour, and have been separated as *Turdus hodgsoni*, but Mr. Seebohm states that examples from Asia Minor are intermediate between the western and eastern birds. The Mistle-Thrush breeds in the Himalayas at a height of from 9,000 or 10,000 feet, descending to the lower valleys in winter, at which season of the year the bird visits Southern Persia and also migrates to Southern Europe and Northern Africa.

Habits.—It is not only the larger size of the present species which makes it a conspicuous object in this country, but the wilder and bolder manners of the bird at once direct attention to it. Excepting during the breeding season, the Mistle-Thrush is a very shy and wary bird, and is only to be observed in open country, never frequenting hedge-rows like the Blackbird or Song-Thrush. Its favourite haunts are parks, especially when there is plenty of pasture-land attached, while in the north it affects the pine-woods more particularly. It is a very early breeder, often building its nest in February and the early part of March, before any leaves are on the trees, but owing to its quiet and retiring manners, the nesting does not attract much attention. Family parties of Mistle-Thrushes, consisting of old and young birds, are often to be seen in the pastures during the autumn and winter, but the birds keep well out of danger, and fly off on the smallest alarm, their white axillaries being very conspicuous as they take wing, one after another. Notwithstanding the large size and bold nature of the bird, it is one of the first to succumb in winter, if snow covers the ground for any length of time. Numbers perish in severe winters, and the bird is then forced to seek for berries in every place it can, and may then be found frequenting the gardens in the middle of the towns, while it is also driven in its distress to seek for food with the Song-Thrushes and Starlings at the hands of the bird-protectors. We have often seen Mistle-Thrushes feeding in our garden on the barley-meal which is daily provided for the starving birds in hard winters.

From its habit of singing from the top of a tree in boisterous weather, the bird has got the name of "Storm-cock," and it sings throughout the winter. The song is somewhat monotonous, but the notes are mellow, and may be compared to those of the Ring-Ouzel.

Nest.—A somewhat rough structure outside, composed of grass and moss, with pieces of wood, then lined with mud or clay, and neatly finished with finer grass inside. It is seldom found in evergreens, but is often discovered in old fruit or thorn-trees, where it is generally concealed by the decoration of lichens which the birds add to the outside of the nest, thereby rendering it indistinguishable from the lichen-covered boughs. It is sometimes built at a great height from the ground.

Eggs.—Four or five in number. Ground-colour stone-grey or clay-colour, spotted and blotched with reddish-brown, generally distributed over the eggs, sometimes inclining to purplish-brown or black. The underlying spots are distinct, and of a light brown or dull grey colour. Occasionally the ground-colour is creamy-buff, the spotting being the same. Axis, 1·15–1·35 inch; diam., 0·85–0·90. The shape of the eggs varies considerably, some being rounded and others very long.

THE FIELDFARE. TURDUS PILARIS.

Turdus pilaris, Linn., Syst. Nat., i., p. 291 (1766); Macg., Br. B., ii., p. 105 (1839); Dresser, B. Eur., ii., p. 141, pls. 4, 5 (1870); Newt. ed. Yarr., i., p. 272 (1872); Seeb., Cat. B. Brit. Mus., v., p. 205 (1881); id. Br. B., i., p. 228 (1883); B. O. U. List Br. B., p. 2 (1883); Lilford, Col. Fig. Br. B., pt. i. (1885); Saunders, Man., p. 7 (1889).

Adult Male.—Back and scapulars chestnut-brown, with slightly indicated greyish margins to the feathers; the lower back, rump, and upper tail-coverts ashy-grey, darker on the latter; lesser wing-coverts like the back; the median and greater-coverts dusky brown, washed with ashy and slightly tinged with rufous, the greater coverts and the bastard-wing with whitish margins; primary-coverts and quills dark brown, edged with ashy-grey, a little browner on the secondaries; tail-feathers blackish, edged with ashy, ribbed under certain lights with dusky cross-bars, and the outer feathers fringed with white at the end of the inner webs; crown of head and hind-neck ashy-grey, extending on to the mantle; the crown slightly streaked with blackish centres to the feathers; the base of the forehead hoary-whitish, extending above the eye; lores dusky black; eyelid whitish; sides of face and ear-coverts ashy-grey, streaked with whitish; cheeks ochreous-buff, streaked with black, the stripes widening posteriorly, especially towards the sides of the neck; cheeks, throat, and breast ochreous-buff, the cheeks scantily streaked with black, the throat uniform, the lower throat and chest distinctly streaked, and the chest mottled with blackish centres to the feathers, which are continued down the sides of the body and tinged with chestnut; centre of breast and abdomen white, as well as the under tail-coverts, which have blackish margins; under wing-coverts and axillaries white; quills dusky below, ashy along the inner webs; bill yellow; feet black; iris reddish-brown. Total length, 10 inches; culmen, 0·8; wing, 5·5; tail, 4·0; tarsus, 1·3.

Adult Female.—Similar to the male, but not so richly coloured, the markings on the sides of the breast and throat much less defined. Total length, 10 inches; wing, 5·6.

Young.—Dusky brown above, the mantle darker, the upper surface streaked with whitish along the shafts of the feathers, which are further mottled with black tips; throat and fore-neck orange-buff, largely spotted with black tips to the feathers, the spots smaller and less pronounced on the breast and sides of the body.

Range in Great Britain.—A regular winter visitor, arriving in large flocks and gradually dispersing over the country, so that its arrival in the western districts is later than the time when it visits the eastern coasts. Its time of arrival varies, according to the severity of the winters in its European home, which force it to migrate, but it sometimes comes as early as the middle of September, though flocks are also seen to land as late as the end of November. It has been known to stay as late as May and even early June, according to Mr. Howard Saunders, but all statements of its breeding in the British Islands have so far been found untrustworthy, and the nests of the "Fieldfare" which have been sent to us from Ross-shire and other parts of Scotland have always turned out to be those of the Mistle-Thrush.

Range outside the British Islands.—A northern bird in Europe and Siberia, its breeding range extending east to 110° E. long. Its breeding range does not reach quite so far north as that of the Redwing, extending to the Arctic Circle, up to the limit of forest growth or a little beyond it, and Mr. Seebohm met with it in the Petchora up to 68° N. lat., and in the Yenesei up to 70½°. It also breeds in Central Russia, the Baltic Provinces, Eastern Prussia, and Poland, and colonies are being formed in several places in Germany. In winter it migrates south, visiting North and North-eastern Africa and to the eastward Turkestan, while it is also said to occur in the Western Himalayas and Cashmere; the only Indian specimen known in collections, however, is one in the British Museum, procured by Dr. Jameson near Sahåranpur.

Habits.—This is one of the most beautiful Thrushes in the world, and nothing can be finer than to see a flock of newly-arrived Fieldfares settling on a tree, after landing on our eastern coasts. Not only the size of the birds, but their rich contrast of colour, white breasts, and above all the way in which they hold themselves, with their ample white axillaries always more or less in evidence—all these features tend to make the Fieldfares a remarkable object, as they sit on the leafless boughs and are outlined against the sky. These Thrushes are always gregarious, arriving in bands, feeding together throughout the winter, and nesting in companies on their return to their northern home. They are always shy during their stay in England, and are the less easily observed of all the Thrushes, though they become tamer in severe weather, and then visit parks and gardens, even in the middle of the towns, to hunt for berries. Thus we have seen them in hard weather frequenting the gardens of the Natural History Museum at South Kensington along with Redwings and Mistle-Thrushes.

The note of the Fieldfare is a harsh cry of *tsak*, generally uttered from the top of a tree, where the bird keeps a good look-out for danger, and they have also a chattering note which is often uttered by the birds as they fly high overhead, and is quite unlike the note of any of the other British Thrushes.

In its northern home the bird nests in colonies in the birch-trees, and several nests will be found on the same tree. Farther north Mr. Seebohm says it loses its gregarious habits, and on the barren tundra the nest is placed on the ground like that of the Ring-Ouzel, the bird choosing a niche under the turf on the edge of a cliff.

Nest.—Built in the branches of a birch-pine, or an alder-tree, sometimes in out-houses, or in a low bush. Mr. Seebohm says that it is very similar in construction to that of the Blackbird or Ring-Ouzel, the outside being made of coarse dry grass, with sometimes a few birch-twigs or a little moss interwoven, then plastered with mud, and finally lined with a thick bed of fine grass.

Eggs.—From four to six in number. The colour varies immensely, scarcely two clutches being alike. The ground-colour is bluish-green, and the markings and spots are rufous or chestnut-brown, sometimes so thickly distributed as to hide the ground-colour of the egg, at other times consisting of large red blotches, distributed widely, or congregating round the larger end. Sometimes nearly unspotted eggs are found. The underlying markings are light reddish-brown, scarcely to be distinguished. Axis, 1·1–1·25 inch; diam, 0·8–0·8.

THE AMERICAN THRUSH. TURDUS MIGRATORIUS.

Turdus migratorius, Linn., Syst. Nat., i., p. 292 (1766); Seeb., Cat. B. Brit. Mus., v., p. 220 (1881); Ridgw. Man. N. Amer. B., p. 577 (1887); Saunders, Man., p. 10, note (1889).

Adult Male.—General colour above ashy-grey, the lesser wing-coverts like the back; lesser and median coverts dusky, externally slaty-grey, the former narrowly tipped, and the latter edged with hoary-whitish; bastard wing-feathers blackish; primary-coverts and quills dusky-brown, edged with hoary-grey, the secondaries more broadly; tail-feathers black, edged with grey, the outer ones fringed with white, increasing towards the outer feathers, which have a white tip; head blackish, this colour extending over the nape and hind neck; lores black, surmounted by a white streak; upper and lower eyelids white; ear-coverts black, washed with slaty-grey; sides of neck slaty-grey; cheeks and throat white, with a broad moustachial streak of black, the throat spotted with black; under surface of body from the lower throat downwards clear cinnamon-chestnut or bay, the lower abdomen, thighs, and under tail-coverts white, the latter with dusky centres; sides of lower flanks ashy-grey; under wing-coverts and axillaries bright cinnamon-rufous like the breast; quills dusky below, ashy-fulvous along the inner webs; bill bright yellow, tipped with black; feet brown; iris brown. Total length, 9 inches; culmen, 0·9; wing, 5·1; tail, 3·8; tarsus, 1·2.

Adult Female.—Similar in plumage to the male, but rather paler cinnamon below, with hoary margins. Total length, 9 inches; wing, 5·0.

Range in Great Britain.—The American "Robin" has been procured near Dover, and once near Dublin. Mr. Howard Saunders thinks that the birds were in all probability escaped individuals, but it is by no means an unlikely bird to wander eastward, and has occurred in Heligoland.

Range outside the British Isles.—A bird of North America, especially of the Eastern States, extending north to Alaska, and south to Mexico, while its western range is bounded by the great plains.

THE NIGHTINGALES. GENUS DAULIAS.

Daulias, Boie, Isis, 1831, p. 542.
Type, *D. luscinia* (Linn.).

There are three species of true Nightingale known, all plain-plumage birds, but all celebrated songsters. In their plain plumage they look like Warblers, but are shown to belong to the family of the Thrushes by their spotted nestlings. The tail is light chestnut, or russet-brown, the second primary longer than the sixth, and the first, or bastard-primary, is so small as to be less than one-third of the length of the second. The Nightingale which comes to England in the summer is replaced on the Continent from the valley of the Rhine and Southern Sweden eastward by *Daulias philomela*, the "Thrush-Nightingale," which extends to Turkestan and South-west Siberia, and winters as far south as Nyasa-Land in Africa. In certain parts of Turkestan and Persia, a third species, *Daulias golzi*, occurs and winters in Northern India.

THE COMMON NIGHTINGALE. DAULIAS LUSCINIA.

(*Plate XXIII.*)

Motacilla luscinia, Linn., Syst. Nat., i., p. 328 (1766).
Philomela luscinia, Macg., Br. B., ii., p. 221 (1839).
Daulias luscinia, Newt. ed. Yarr., i., p. 312 (1872); Dresser, B. Eur., ii., p. 363, pl. 56 (1876); B. O. U. List Br. B., p. 11 (1883); Lilford, Col. Fig. Br. B., pt. 9 (1888); Saunders, Man., p. 39 (1889).
Erithacus luscinia, Seeb., Cat. B. Brit. Mus., v., p. 294 (1881); id. Br. B. i., p. 276 (1883).

Adult Male.—General colour above russet-brown, more rufous on the upper tail-coverts; upper wing-coverts like the back; bastard-wing, primary-coverts and quills dusky-brown, externally rufous-brown; tail-feathers light chestnut, brown on the edges and on the centre feathers; head like the back; lores grey; eyelid whitish; ear-coverts ruddy-brown like the back; cheeks ashy, shading into the sides of neck; throat and under surface of the body dull whitish, the lower throat, chest, and sides of body ashy-grey with a brownish tinge; the under tail-coverts fulvescent; thighs dark brown; under wing-coverts buff, with ashy bases; the lower primary-coverts ashy-brown, with buffy-white tips; quills dusky below, ashy-fulvous along the inner web; bill brown, the lower mandible horn-colour; feet and claws, brown; iris hazel. Total length, 6·5 inches; culmen, 0·55; wing, 3·4; tail, 2·75; tarsus, 1·05.

Adult Female.—Similar to the male in colour. Total length, 6 inches; wing, 3·2.

Young.—Duller brown than the adults, and mottled on the upper surface with ochreous-brown markings near the tips of the feathers, which are edged with dusky brown; the under surface of the body dingy-white, with dusky margins to the feathers of the throat and breast; wings and tail as in the adults, but rather darker chestnut; the wing-coverts tipped with ochreous buff spots.

Range in Great Britain.—A summer visitor, arriving in the middle of April, but not extending to the northern counties of England, and up to the present unrecorded from Scotland or Ireland. It does not extend its range through all the western counties of England, and in Devonshire and the greater part of Wales it reaches its western limit in this country. To the north it is found in Yorkshire, and occasionally in Cheshire, but it is only of doubtful occurrence in Lancashire.

Range outside the British Islands.—The Nightingale is a summer visitor to the greater part of Southern and Central Europe, and breeds in all the Mediterranean countries, including North Africa and Palestine. Its range to the north-east extends to the valley of the Vistula, but the species is not found in North-eastern Germany, and in Russia it only inhabits the southern provinces during its stay. In winter it visits North-eastern Africa, and it was found by Captain Shelley on the Gold Coast.

Habits.—The male birds always precede the females in their arrival by a few days, and as soon as they reach our shores they are distributed over the woods and thickets of the southern counties, where their beautiful notes betray their presence. Several males may then be heard singing in the same wood, their liquid notes being heard in answer to one another throughout the whole day. As soon, however, as the hen-birds have come, building operations are commenced, and the male sings more frequently towards nightfall, continuing at intervals throughout the night, if the weather be fine. Until recent years the song of the Nightingale could be heard in the western suburbs of London, and the bird regularly frequented the orchards near Bedford Park up to 1882, while many people are still living who can remember the Nightingale's song at Bayswater, and a specimen from this once rural district of London is in the British Museum.

The favourite resort of the Nightingale for nesting purposes is the tangled bushes which clothe a lane leading along the outside of a wood, and in such places the bird may occasionally be seen flitting across the road or hopping out of its dense retreat to pick up some insect. On these occasions its ways recall the actions of a Robin, in which bird the Nightingale undoubtedly finds a very close ally. It is almost entirely a ground-feeder, and picks up worms, ants, and other insects and larvæ, while the young are said to be fed entirely on caterpillars. In autumn it feeds on fruit and berries like the Warblers.

Nest.—This is very characteristic, being formed principally of dead leaves and grass, which give the outside a somewhat ragged appearance, the inside, however, being more neatly finished off, rather deep, and lined with grasses or rootlets and occasionally with horsehair.

Eggs.—Four or five in number, rarely six. Ground-colour olive-brown or olive-green, occasionally dull bluish-green. The olive-brown eggs appear perfectly uniform, but in the green type of eggs there is generally some olive-brown clouding the larger end, or forming a dense ring of brown spots. Occasionally the eggs are of a deep bright blue colour. Axis, 0·8–0·9 inch; diam., 0·6–0·65. (Plate xxix., fig. 6.)

THE REDBREASTS. GENUS ERITHACUS.

Erithacus, Cuv., Leçons Anat. Comp., tab. ii. (1801).

Type, *E. rutecula* (Linn.).

The Robins are miniature Thrushes, having the spotted young which prove them to be members of the family *Turdidæ*. The brighter coloration of the birds has something to do with their separation as a distinct genus from the Thrushes on the one hand and the Redstarts on the other. The type of egg of the Robins, however, is different from that of any of the allied genera, whilst the similarity of the colour of the sexes separates them from the Redstarts, and allies them to the Thrushes and Nightingales. According to the divisions of the *Turdidæ* recently proposed by Mr. Oates, in his "Fauna of British India," the Redbreasts would come within his definition of the *Ruticillinæ* (p. 81) and would come near to the genus

Tarsiger. The uniformity of colouring of both sexes is one of the chief characteristics of the genus *Erithacus*. The bill is plentifully beset with bristles, and the first primary is large, being nearly half the length of the second.

THE COMMON REDBREAST. ERITHACUS RUBECULA.

Motacilla rubecula, Linn., Syst. Nat., i., p. 337 (1766).
Erithacus rubecula, Macg., Br. B., ii., p. 263 (1839); Newt., Br. B., i., p. 305 (1872); Dresser, B. Eur., ii., p. 329, pl. 51 (1873); Seeb., Cat. B. Brit. Mus., v, p. 299 (1881); id. Br. B., i., p. 262 (1883); B. O. U. List Br. B., p. 10 (1883); Saunders, Man., p. 37 (1889); Lilford, Col. Fig. Br. B., pt. xxii. (1892); Wyatt, Br. B., pl. 3, fig. 2 (1894).

Adult Male.—General colour dark olive-brown, with a slight greyish shade, the wing-coverts like the back, with pale ochreous-buff tips to the greater series; primary-coverts, quills, and tail-feathers dark brown, edged with olive; crown of head like the back; base of forehead and lores orange-rufous, extending over the eye; cheeks, throat, and chest also bright orange-rufous, with a broad shading of bluish-grey reaching from behind the eye and skirting the orange of the throat down the sides of the neck to the sides of the upper breast, which are also bluish-grey; centre of breast and abdomen dull white, the flanks light olive-brown; thighs darker olive; under wing-coverts and axillaries yellowish-buff, with ashy bases; quills dusky brown below, ochreous along the inner web; bill dark brown, lighter at the base; legs brown; iris very dark brown. Total length 6 inches; culmen, 0·5; wing, 3·1; tail, 2·4; tarsus, 1·1.

Adult Female.—Similar to the male. Total length, 6 inches; wing, 2·85.

Young.—Ochreous-brown, the feathers centred with ochreous-buff, and mottled with blackish tips to the feathers, the wing-coverts all plainly centred with ochreous-buff; underneath, ochreous-buff, paler on the throat and abdomen, the feathers of the breast and sides of the body edged with dusky brown.

After the autumn moult the young birds resemble the adults, but can always be recognised by golden-buff tips to the median wing-coverts, forming a band which lasts even to the following spring.

Range in Great Britain.—Is found as a resident in every part of the British Islands, but has not yet been met with as a breeding bird in the Hebrides. A considerable migration of Robins takes place every autumn from the Continent, and even our home-bred birds shift their quarters somewhat, and a good number of them leave the country.

Range outside the British Islands.—Breeds throughout Europe, but is local in the south of Spain. It likewise occurs in the Canaries and the Azores, and appears in a slightly modified form in Teneriffe, which has been named by Dr. Koenig *Erithacus superbus*. Its eastern breeding range extends to the Ural Mountains, but the bird is here not so abundant as it is in the west, and its place is taken in Persia by *Erithacus hyrcanus*.

The Robin is much more of a migratory species than is generally supposed, and has been met with in the Faeroes and Jan Mayen, but is not yet recorded from Iceland. A letter received from Mr. Robson some years ago informed us that, as he was writing, swarms of Robins and Hedge-Sparrows were passing through the Buyukdere Valley, near Constantinople, on migration. This was in the autumn, and it is evident that numbers of Robins avoid the cold in the north during winter, and at such seasons the bird is found in Egypt and Palestine, and as far east as Persia and Turkestan.

Habits.—The migration of the Robin, just alluded to, is to a certain extent enforced, not only by the approach of the cold weather, but by the habit of the old birds of driving off their young ones as soon as the latter can shift for themselves. This is the more remarkable because there is no bird more solicitous than the Robin in the care of its nestlings; but it is jealous of any intrusion on its own domain, and fights other birds, as well as those of its own species, who dare to invade it. Thus, in the autumn, young Robins are seen in numbers scattered over the southern counties of England, mostly young birds in the spotted dress, with a patch of red on the throat, showing that the birds are moulting into their adult plumage. Even before the moult is completed, the young males give forth short snatches of a melancholy song, and as many as half-a-dozen may be heard answering each other from different parts of the village gardens before they finally take flight across the Channel.

The Robin is a general favourite, not only on account of its trustful disposition and tameness, but also on account of its song, which is heard at all times of the year excepting during the moulting season, and is always welcome in winter, when the voices of most birds are silent. The call-note of the Robin is clear and musical, but the cry of distress, as when a cat comes near the nest, is a long drawn shrill note—one of the most disagreeable and ear-splitting notes imaginable.

Nest.—All kinds of situations are chosen for the home of the Robin, and the nest may be found in the hole of a wall or a tree, whilst an old can or kettle, discarded by the housewife and thrown away amongst the rubbish of the garden, is often utilised. Very often the nest is placed amongst ivy or on the ground, particularly in a moss-covered bank, where the herbage conceals it. The foundation of the nest consists of dead leaves and moss, but it is neatly lined with rootlets and hair.

Eggs.— From five to eight in number. Ground-colour buffy-white or china-white. They vary a good deal in the tint of colour and markings, some being nearly spotless, while others are thickly clouded with rufous markings, collecting at the larger end. In some specimens the whole egg is thickly sprinkled with reddish spots, while in others the blotches are larger and sparsely distributed. Axis, 0·8–0·9; diam., 0·55–0·65. Mr. Robert Read gives it as his experience that eggs from the North of England and Scotland are more heavily marked than those from the south. He has sets of white and pale blue eggs in his collection. (Plate xxix., fig. 3.)

THE BLUE-THROATS. GENUS CYANECULA.

Cyanecula, C. L. Brehm, Isis, 1828, p. 1280.

Type, *C. suecica* (Linn.).

These pretty birds have been placed along with the Robins in modern classifications, and there can be no doubt that they are closely allied to those birds, but they form a natural genus, remarkable for their style of coloration. They differ from the Robins in having the rictal bristles scarcely perceptible, and in having the sexes different in colour, both male and female having the tail for the most part chestnut.

Two species of Blue-throat are recognised, one with a red spot (*C. suecica*) and one with a white spot (*C. cyanecula*). The latter is not nearly so wide-spread as the former bird, and only occurs in Central Europe, scarcely reaching as far east as Russia, but visiting Northern Africa and Palestine in winter, recurring in Gilgit, and wintering sparingly in India.

THE ARCTIC BLUE-THROAT. CYANECULA SUECICA.

Motacilla suecica, Linn., Syst. Nat., i., p. 336 (1766).
Ruticilla cyanecula, Macg., Br. B., i., p. 300 (1839).
Ruticilla suecica, Newt. ed. Yarr., i., p. 321 (1873).
Cyanecula suecica, Dresser, B. Eur., ii., p. 317, pls. 49, 50, fig. 2 (1874); B. O. U. List. Br. B., p. 10 (1883); Lilford, Col. Fig. Br. B., pt. ii. (1886); Saunders, Man., p. 35 (1889).
Erithacus cæruleculus, Seeb., Cat. B. Brit. Mus., v., p. 308 (1881).
Erithacus suecica, Seeb., Br. B., i., p. 269 (1883).

Adult Male.—General colour above dark-brown, with a slight olive tinge; wing-coverts dark brown, externally lighter brown; central upper tail-coverts and centre tail-feathers blackish-brown with hoary margins; the remainder of the coverts and tail-feathers orange-chestnut for the basal half and blackish-brown for the terminal half, forming a broad band; crown of head like the back; lores black, surmounted by an eye-streak of buffy-white; feathers below the eye and ear-coverts light rufous-brown, with pale shaft-lines; throat cobalt-blue, extending down the sides of the neck, and crossing the fore-neck so as to enclose a large chestnut or orange-rufous spot on the lower throat; the blue band on the fore-neck succeeded by a black collar, which in turn is succeeded by a white one, and then by a broad chestnut one which occupies the breast; breast and abdomen white; sides of body olive-brown; thighs and under tail-coverts whitish, the latter washed with orange; axillaries and under wing-coverts orange-buff; bill dark brown; feet brown; iris dark brown. Total length, 5·5 inches; culmen, 0·5; wing, 3·05; tail, 2·05; tarsus, 1·05.

Adult Female.—Different from the male, and wanting the blue on the throat, which is creamy-white, with black along the sides and across the fore-neck, slightly tinged with orange-buff on the chest, which is also mottled with blackish centres to the feathers. Total length, 5·3 inches; wing, 2·8.

Range in Great Britain.—Occurs in the southern and eastern counties of England mostly on the autumn migration, but has also been taken in the spring. In Norfolk, in 1881 and 1884, a considerable number were observed in September. It has never been recorded from Ireland, but three instances are known of its capture in Scotland.

Range outside the British Islands.—Breeds in the high north of Europe and Asia, within the Arctic Circle, and at elevated situations in the birch regions in the central portions of Europe and Asia; it nests in Turkestan and Yarkand, and has been found in Kamtchatka and even in Alaska. It winters in India and Ceylon and the Burmese countries, as well as in Southern China. In Africa it has been found as far south as the equatorial provinces, and regularly winters in Abyssinia.

Habits.—The Blue-throats seem to be everywhere swamp-loving birds, and the specimens of *C. cyanecula* which we procured near the Neusiedler Lake in May, 1891, were noticed only in the dense beds of dwarf willows, where the ground was still moist under foot. Here only the males were observed, as they came occasionally to the top of a bush and uttered a short song. The females we never saw, and this accords with the testimony of other naturalists, that she is always more shy and retiring than her mate. Mr. Seebohm says that in Scandinavia the Blue-throat is one of the commonest of birds, and is not very shy on its first arrival. He writes: "His first attempts at singing are harsh and grating, like the notes of the Sedge-Warbler, or the still harsher ones of the White-throat; these are followed by several variations in a louder and rather more melodious tone, repeated over and over again, somewhat in the fashion of a Song-Thrush. After this you might fancy the little songster was trying to mimic the various alarm notes of all the birds he can remember: the *chiz-zit* of the Wagtail, the *tip-tip-tip* of the Blackbird, and especially the *whit-whit* of the Chaffinch. As he improves in voice he sings louder and longer, until at last he almost approaches the Nightingale in the richness of the melody which he pours forth. Sometimes he will sing as he flies upwards, descending with expanded wings and tail to alight on the highest bough of some low tree, almost exactly as the Tree-Pipit does in the meadows of our own land. When the females have arrived, there comes at the end of his song the most metallic notes I have ever heard a bird utter. It is a sort of *ting-ting*, resembling the sound produced by striking a suspended bar of steel with another piece of the same metal. The female appears to shun the open far more carefully than her mate; and while he will be perched on a topmost spray, gladdening the whole air around with his tuneful melody, she will remain in the undergrowth beneath him, gliding hither and thither, more like a mouse than a bird, through the branches."

Nest.—According to Mr. Seebohm, not unlike that of a Robin, the hole being well filled with dry grass and roots, and at the far end a neat, deep cup lined with fine roots and hair. Even when the bird has been frightened off, and the place of the nest assured, it is still difficult to find, so well is it concealed.

Eggs.—Resemble those of the Nightingale, especially the type of the latter where the ground-colour is bluish-green. The spots are reddish, and either cloud the whole of the egg or are collected at the larger end. Some, on the other hand, are almost uniform olive-brown. Axis, 0·7–0·8 inch; diam., 0·55–0·6.

THE ROCK-THRUSHES. GENUS MONTICOLA.

Monticola, Boie, Isis, 1833, p. 552.
Type, *M. saxatilis* (Linn.).

Though possessing a bill and general appearance like the Thrushes, there is the character of the bright colours of the male and the remarkable difference in the colour of the sexes, which separate the genus *Monticola* from the true *Turdidæ*. They seem to connect the Chats and the Thrushes, the red tail being a feature which suggests an alliance with the Redstarts.

The Rock-Thrush is the sole representative of the genus *Monticola*, the Blue Rock-Thrushes having a much longer tail, more than half the length of the wing, and being distinguished as a separate genus, *Petrophila*. A species from Southern Europe, *P. cyanea*, was at one time stated to have occurred in Ireland, but the record was wholly false.

THE-ROCK THRUSH. MONTICOLA SAXATILIS.

Turdus saxatilis, Linn., Syst. Nat., i., p. 294 (1766).

Monticola saxatilis, Dresser, B. Eur., ii., p. 129, pls. 16, 17 (1872); Newt. ed. Yarr., i., p. 292 (1872); Seeb., Cat. B. Brit. Mus., v., p. 313 (1881); id. Br. B., i, p. 281 (1883); B. O. U. List Br. B., p. 5 (1883); Lilford, Col. Fig. Br. B., pt. i. (1885); Saunders, Man., p. 17 (1889).

Adult Male.—General colour blackish with a slaty gloss; centre of back white with slaty margins to the feathers; rump slaty-blackish; upper tail-coverts orange-chestnut; wing-coverts slaty-blackish, like the scapulars, with obsolete white tips to the coverts; primary-coverts and quills dusky brown, the secondaries with narrow white tips, the innermost pale brown at the ends; tail-feathers orange-chestnut, except the two centre ones, which are ashy-brown; crown of head and neck all round, as well as the entire throat, greyish-blue; remainder of under surface from the lower throat downwards, bright orange-chestnut, with a few greyish edgings to the feathers of the lower breast; under wing-coverts and axillaries like the breast; quills dusky, ashy along the inner web; bill, feet, and claws black; iris hazel. Total length, 7 inches; culmen, 0·8; wing, 4·65; tail, 2·2; tarsus, 1·0.

Adult Female.—Different from the male. Ashy-brown above, mottled with whity-brown edges to the feathers, before which is a subterminal blackish bar; the rump barred with pale ochreous edges to the feathers; upper tail-coverts and tail bright cinnamon; the two centre tail-feathers ashy-brown, and the others with a small brown mark near the end of the outer web; crown of head like the back, the forehead more hoary; lores dull white; ear-coverts dull white, streaked with dusky brown edges to the feathers; cheeks and throat white, mottled with dark brown margins to the feathers, the upper throat unspotted; breast and sides of body pale golden-buff, the feathers all edged with dusky brown, these markings becoming evanescent on the abdomen; under tail-coverts golden-buff; thighs white, washed with cinnamon; axillaries and under wing-coverts bright golden-buff or orange. Total length, 6·3 inches; culmen, 0·75; wing, 4·55; tail, 2·2; tarsus, 1·0.

Range in Great Britain.—Only a single instance of the occurrence of the Rock-Thrush in our islands is authentic, a specimen having been procured at Therfield in Hertfordshire on the 19th of May, 1843. This specimen was examined by Mr. Yarrell in the flesh.

Range outside the British Islands.—The Rock-Thrush is a bird of Central and Southern Europe, ranging eastwards to Turkestan, Mongolia, and Northern China. It also nests in the valleys of the Rhine and the rivers of Eastern France and in the Vosges Mountains, as well as in some of the ranges of Central Germany. It has occurred in Belgium and in Heligoland. It is met with on migration in the Western Himalayas, at Gilgit and in Ladak, and was obtained by Mr. Blanford near Ava, in Burma.

Habits.—Canon Tristram describes the Rock-Thrush as very like a Redstart in its actions, while other observers notice its resemblance to a Wheatear, as it flits from rock to rock. Its food consists of insects, but in the autumn berries and fruit are eaten. The song is said to be rich and powerful, and almost to rival that of the Blackcap.

Nest.—Always well-concealed and placed in the hole of a rock or of a ruined building, more rarely in the hole of a tree or of a house. The nest is composed of roots and grass, and lined with finer roots, occasionally with a few feathers. It is very like that of a Chat or a Redstart, and no mud is used in its construction.

Eggs.—Four or five in number. Blue, like the Song-Thrush's egg, but either spotless, or so faintly dotted with a few specks of brown as to be almost uniform. The size and shape varies a good deal. Axis, 1–1·15 inch; diam., 0·75–0·8.

THE REDSTARTS GENUS RUTICILLA.

Ruticilla, C. L. Brehm, Isis, 1828, p. 1280.

Type, *R. phœnicurus* (Linn.).

The members of this genus have spotted young like that of a Redbreast, and are otherwise like that bird in form, but the sexes are different in colour, and much more variegated, with chestnut tails. The legs are always black like those of Chats, the eggs are blue like those of the latter birds, and the tarsus is smooth and not scutellated. The bill is slender, and rictal bristles are present.

The largest number of species of Redstarts occur in the Himalayas, but species are also distributed over the mountains of the Mediterraneo-Persic Sub-region, these mountain forms being mostly residents, whereas our two European species are both migratory.

THE REDSTART. RUTICILLA PHŒNICURUS.

Motacilla phœnicurus, Linn., Syst. Nat., p. 335 (1766).
Ruticilla phœnicurus, Macg., Br. B., ii., p. 305 (1839), Newt. ed. Yarr., i., p. 339 (1873); Dresser, B. Eur., ii., p. 277, pl. 41 (1874); Seeb., Cat. B. Brit. Mus., v., p. 336 (1881); id. Br. B., i., p. 287 (1883); B. O. U. List Br. B., p. 8 (1883); Lilford, Col. Fig. Br. B., pt. i. (1885); Saunders, Man., p. 35 (1889).

Adult Male.—General colour above slaty-grey; the rump and upper tail-coverts orange-chestnut; lesser and median wing-coverts grey like the back; greater coverts and quills dusky brown; tail-feathers orange-chestnut, darker on the outer webs, the two centre feathers dark brown; forehead white, extending in a line over the ear-coverts; a narrow line at the base of the forehead, feathers above the eye, ear-coverts, sides of face, throat, and fore-neck, black; breast and sides of body orange-chestnut; the abdomen whitish, washed with orange; under tail-coverts pale orange-buff; under wing-coverts and axillaries orange-chestnut; bill and feet black; iris dark-brown. Total length, 5·4 inches; culmen, 0·5; wing, 3·05; tail, 2·1; tarsus, 0·8.

Adult Female.—Different from the male, being ashy-brown above instead of slaty-grey; the orange-chestnut colour of the rump and tail paler; lores dull white; ear-coverts earthy-brown; cheeks ashy-brown; throat dull white, as also the abdomen and under tail-coverts; the fore-neck, breast, and sides of body sandy-brown; *under wing-coverts and axillaries yellowish-buff;* quills dusky brown below, ochreous along the inner web. Total length, 5·3 inches; wing, 3·1.

Young.—Mottled like a young Robin, and having the upper surface varied with ochreous-buff spots and black edges to the feathers; the under surface yellowish-buff, barred with dusky edges to the feathers; the upper tail-coverts and tail orange-rufous, as in the adults.

Winter Plumage.—The whole of the upper surface grey, as well as the throat, the black and white facial markings being concealed by pale margins which wear off and leave the summer plumage visible.

Range in Great Britain.—A summer visitor to all the British Islands, though it is only quite recently that it has been known to breed in Ireland, where it was before considered to be a rare bird. Its breeding-range extends throughout England and Scotland, but the bird is rarer in the south-western counties, and, like the Nightingale, its range seems to be almost bounded by the River Exe, though the Redstart has been found breeding in Cornwall on rare occasions. It has also been known to breed of recent years in Sutherlandshire and Caithness, but is unrecorded from the Hebrides, and is only a rare visitor to the Orkneys and Shetland Isles.

Range outside the British Islands.—Breeds throughout Central and Southern Europe as far as the Arctic Circle, and east to the Yenesei. In the south of Europe it is principally known as a migrant, and breeds only on the mountains. In Greece, Asia Minor, and the Caucasus the Redstart is represented by an allied species, *Ruticilla mesoleuca*, which has white on the wing like the Black Redstart. Our species winters in Persia and Palestine, and it extends in Africa to Abyssinia and the eastern districts, as well as to Senegambia on the west coast.

Habits.—On their first arrival the males precede the females by a few days, and it is then that the birds are mostly observed, for at other times they are very shy and retiring in their habits. After the males have arrived they may be seen, sometimes in some numbers, on the outskirts of the woods in our southern counties, flitting along in front of the observer, and either perching on the fences or the trees. At such times the red tail renders the bird a conspicuous object, and it is from the bright colour of this organ that the species gets its common name of "Fire-tail" in many parts of England. The tail is expanded, and moved up and down with a fanning motion, which causes the bird to be easily observed. As soon as the females have arrived, the birds disperse themselves over the country for the nesting-season, and are then not so easy of observation, and the quiet way in which the birds disappear after the breeding-season has been remarked by more than one writer. The Redstart haunts old ruins, in the holes of which it makes its nest, but it also builds in holes of trees and walls, and in queer places, such as a Robin sometimes selects. The nest, however, with its pretty blue eggs, is always well concealed. The birds evince great affection for a chosen site, and will not easily desert it, even if the eggs are taken more than once.

The song of the Redstart is not very powerful or varied, and is far inferior to that of the Warblers, but, like some of the latter, it sings at night. In many of its ways it resembles a Flycatcher, especially in its habit of catching insects by darting after them in the air, and in this way it sometimes catches a passing butterfly.

Nest.—Made of dry grass and moss, with a little wool, and lined with hair and feathers. It is a loosely-made and inartistic structure.

Eggs.—From five to six in number, but sometimes as many as eight. The colour is pale blue. Axis, 0·65–0·85; diam., 0·55–0·6.

THE BLACK REDSTART. RUTICILLA TITYS.

(*Plate XXIV.*)

Motacilla phœnicura, B. *titys*, Linn., Syst. Nat., i., p. 335.
Ruticilla tithys, Macg., Br. B., ii., p. 311 (1839); Seeb., Cat. B. Brit. Mus., v., p. 339 (1881); id. Br. B., i., p. 293 (1883).

Ruticilla titys, Newt. ed. Yarr., i., p. 333 (1873); Dresser, B. Eur., ii., p. 293, pl. 44 (1874); B. O. U. List Br. B., p. 9 (1883); Lilford, Col. Fig. Br. B., pt. 1 (1885); Saunders, Man., p. 33 (1889).

Adult Male.—General colour above clear slaty-grey, the rump and upper tail-coverts bright orange-chestnut; wing-coverts black, edged with slaty-grey, the tips of the greater series lighter; bastard-wing black; quills blackish, externally edged with hoary grey, the secondaries with white, forming a large wing-patch; tail-feathers orange-chestnut, darker on the outer web; the two centre tail-feathers dark brown, rufous towards the base of the outer web; head like the back, a little lighter towards the forehead, the base of which is black, like the lores, feathers round the eye, ear-coverts, sides of face, throat, and breast, the latter with grey margins to the feathers; sides of body and flanks slaty-grey, the centre of the abdomen whitish; lower flanks pale cinnamon, as also the under tail-coverts; thighs black; axillaries grey, with whitish tips; under wing-coverts black, edged with hoary grey; quills dusky brown below, ashy-whitish along the inner web; bill and feet black; iris brown. Total length, 3·2 inches; culmen, 0·55; wing, 3·4; tail, 2·3; tarsus, 0·9.

Adult Female.— Different from the male. Uniform slaty-brown, with a slight tinge of olive above; only the upper tail-coverts chestnut; wings like the back, the quills edged with ashy-brown; tail-feathers chestnut, brown at the tips and towards the end of the outer web; the two centre feathers dark brown; ear-coverts a little darker brown than the head; eyelid whitish; under surface of body slaty-brown, lighter than the upper surface, the abdomen paler; under tail-coverts cinnamon; *under wing-coverts and axillaries slaty-brown like the breast.* Total length, 6 inches; culmen, 0·5; wing, 3·45; tail, 2·35; tarsus, 0·95.

The young males appear to resemble the old females during their first winter, and remain perfectly uniform like the hen birds. The summer plumage is gained by the shedding of the grey edges of the feathers, which leave the black face and breast without any moult. In fact, the black seems to spread over the feathers gradually, as spring approaches, as there is no sign of it in the young males which are killed in early winter.

Range in Great Britain.—A regular winter visitor, principally along the southern coast of England as far as Devon and Cornwall. We have seen several specimens captured near Brighton, and the late Mr. Gatcombe used to obtain the species pretty regularly near Plymouth every winter. It also visits Scotland and Ireland in winter.

Range outside the British Islands.—The Black Redstart is chiefly a bird of Central and Southern Europe, extending northwards to Holland, but only straggling to Denmark and the south of Norway and Sweden. The eastern breeding limit is marked by Mr. Seebohm as 70° E. long., and the bird only occurs in Western Russia as a straggler, in the same way that it reaches occasionally the north of England and Scotland, the Faeroes and Iceland. Its winter range extends to North-eastern Africa.

Habits.—The present species is more like a Robin in its ways, and is found near houses rather than in the woods, where the common Redstart is so often observed, but it is also found nesting in the south of Europe among the rocky valleys. In most countries it not only frequents the towns, but more especially the neighbourhood of gardens and farmhouses, and, unlike the common Redstart, it sometimes seeks for its food on the ground. The song, as with the latter bird, is heard in the night, and especially in the early morning, but it consists only of a few rich notes.

Nest.—A large structure externally, and somewhat ragged and loose, but neatly lined inside. It is made of straw and grass, with moss and a few twigs, and lined with horsehair and a few feathers. It is built in holes of walls and ruins, and in summer-houses and sheds in gardens, verandahs, under eaves of houses, &c., often without any attempt at concealment.

Eggs.—From four to six in number. They are white, sometimes with a very faint tinge of greenish. Axis, 0·75–0·85 inch; diam., 0·6.

THE WHEATEARS. GENUS SAXICOLA.

Saxicola, Bechst., Orn. Tascheub., p. 216 (1802).

Type, *S. œnanthe* (Linn.).

The Chats have a longer bill than the Redstarts, but resemble the latter birds in their black legs and in the different colour of the sexes, though they never have red tails. On the contrary, they nearly all have the rump and base of the tail white, and the mottling of the young is somewhat different in character from that of Thrushes and Redstarts.

The Chats are birds of desert and rocky countries as a rule, and are only found in the Old World, where they avoid the forest districts, so that no species of the genus *Saxicola* is found in the Indo-Malayan or Australian Regions. On the other hand, there are many Chats in the Æthiopian Region, and a large number of species inhabit the Mediterraneo-Persic Sub-region. In most countries they are resident, but some are migratory to a certain extent, none, however, equalling our Common Wheatear in this respect.

THE WHEATEAR. SAXICOLA ŒNANTHE.

(*Plate XXV.*)

Motacilla œnanthe, Linn., Syst. Nat., i., p. 332 (1766).
Saxicola œnanthe, Macg., Br. B., ii., p. 347 (1839); Newt. ed. Yarr., i., p. 289 (1872); Dresser, B. Eur., ii., p. 187, pl. 21 (1874); Seeb., Cat. B. Brit. Mus., v., p. 391 (1881); id. Br. B., i., p. 298 (1883); B. O. U. List Br. B., p. 6 (1883); Lilford, Col. Fig. Br. B., pt. i. (1885); Saunders, Man., p. 19 (1889).

Adult Male.—General colour above slaty-blue, slightly washed with brown; rump and upper tail-coverts white; wing-coverts and quills brownish-black, with obsolete brownish margins, the secondaries narrowly fringed with ashy-whitish at the ends; centre tail-feathers blackish-brown, the remainder white, with the terminal third blackish-brown, forming a broad band; crown of head grey, like the back; base of forehead white, with a distinct white eyebrow running from the base of the bill to beyond the line of the ear-coverts; lores, eyelids, sides of face, and ear-coverts, black; cheeks, throat, sides of neck, breast, and sides of body, pale tawny-buff; the centre of the breast, abdomen, thighs, and under tail-coverts creamy-white; axillaries white, with dusky bases; under wing-coverts black with white edges; quills ashy below; bill and feet black; iris dark brown. Total length, 5·8 inches; culmen, 0·65; wing, 3·7; tail, 2·1; tarsus, 1·0.

Adult Female.—Duller in colour than the male, being everywhere browner, but with the same white rump and tail-markings; base of forehead slightly paler brown than the head; the fore part of the eyebrow brownish-white, the hinder part purer white; lores blackish; ear-coverts brown; under surface of body pale sandy-buff, lighter on the abdomen and under tail-coverts; under wing-coverts and axillaries dusky brown, with white edgings. Total length, 5·8 inches; wing, 3·5.

Young.—Light chocolate-brown above, mottled all over with dusky blackish edgings to the feathers; the head and neck lighter brown, mottled with terminal spots and streaks of sandy-buff; lesser and median wing-coverts blackish, spotted with sandy-buff at the ends; the greater coverts and quills broadly edged with rufous; rump and upper tail-coverts white; tail-feathers tipped with rufous; ear-coverts dark brown with sandy-buff streaks; under surface of body sandy-buff, lighter on the throat and abdomen; the fore-neck and breast mottled with dusky margins to the feathers; bill light brown, the lower mandible and gape yellow. After the AUTUMN MOULT the young birds resemble the old females, but are more rufous, especially underneath.

Range in Great Britain.—A summer visitor, arriving early in March, and breeding throughout the British Islands, but much less frequently in the southern and midland counties than it does in the north. The birds which arrive in March are smaller in every way than those which arrive in April, about a month later; but the question of the differences between these two races and their geographical distribution has never been satisfactorily explained. The later arrivals always seem to us to be browner, as well as larger, than the first arrivals; and it is this large form which passes through the Shetlands and Iceland on migration, and breeds in Greenland. Colonel Feilden even noticed it as high as 80° N. lat.

Range outside the British Islands.—A nearly circumpolar bird, breeding in the high north throughout Europe and Northern Asia, but only on the higher ground in Southern Europe. The winter home of the Wheatear extends from the North-western Himalayas to Persia, and also to North-eastern and Eastern Africa, as well as to Senegambia.

Habits.—In the northern portions of our islands the Wheatear nests more frequently than in the south, where it is generally observed on migration, and is a common object of the sea-shore in autumn and spring. At the latter time of year it is often to be observed on pasture-land in the interior of the country, perched upon a rail and displaying its white rump conspicuously as it flies off to perch upon the ground or a raised clod of earth—the latter a favourite position. It may then be noticed in Hyde Park, to which the Wheatear is a regular visitor on its migrations. In the fields near the coast it is always to be seen in autumn, perched upon the low bushes or hedges and always sitting on the very topmost twigs, and flying off at the very first approach of danger. Most of the birds thus observed are young birds of the year, which have just completed their first autumn moult, and are resting before taking their journey southward. On being pursued they fly off rapidly and double close to the ground, appearing again at some little distance on the hedge, or flying out to the middle of a field and perching on a mound of earth, or even hiding behind it. In this way the bird proceeds some distance and then flies back to the place from which it was first driven.

The food of the Wheatear consists almost entirely of insects and worms, but small snails are also eaten. A bait of a mealworm is almost sure to trap the bird. Both old and young birds frequent hay-fields in the neighbourhood of their nest, and may be seen flying gently down like a Flycatcher, to pick up an insect, and then returning to their perch, while they will also fly off and catch an insect in the air. In the autumn the birds also feed on berries.

Nest.—A plain structure of dry grass, with a little moss and a few rootlets, and lined with hair or a few feathers. It is exceedingly difficult to find, and is placed in various situations. Mr. Walter Burton has presented to the British Museum a nest which he found on the open beach near Winchelsea, for which the bird had appropriated an old derelict can, which had once held tinned meat and had probably been washed up by the sea. In the wilder parts of Great Britain, where the Wheatear is more often to be seen during the nesting season, it places its nest out of sight in various kinds of places, sometimes far under a ledge of rock, or under a clod of earth, sometimes also in the hole of a wall. Mr. Seebohm likewise mentions a cairn of stones on the sea-shore as a favourite resort, and also the stacks of peat on the moors, and he says that the nest is sometimes to be found at a distance of several feet from the place where the birds enter. A rabbit-burrow is also often selected, and the group which illustrates the nesting of the Wheatear in the British Museum, shows the nest, with the young birds, concealed just inside the burrow, and as the latter was occupied, the Rabbits must have been passing in and out during the whole time of the incubation of the eggs and the rearing of the young.

Eggs.—Four to seven in number. They are entirely pale greenish-blue, or greenish-white, usually without any spots, but occasionally showing some faint spots of purplish-brown, principally at the larger end. Axis, 0·8–0·9 inch; diam., 0·6–0·65. (Plate xxix., fig. 4.)

THE ISABELLINE WHEATEAR. SAXICOLA ISABELLINA.

Saxicola isabellina, Cretzschm. in Rüpp. Atl., p. 52 (1826); Dresser, B. Eur., ii., p. 199, pl. 22 (1874); Seeb., Cat. B. Brit. Mus., v., p. 399 (1881); Saunders, Man., p. 21 (1889).

Adult Male.—General colour above earthy-brown, with an ashy shade, slightly more rufescent towards the rump; the upper tail-coverts white; wing-coverts dark brown, edged with sandy-brown; bastard-wing blackish, narrowly margined with sandy-buff; primary-coverts and quills dark brown, edged externally with ashy-grey, less distinct on the latter, the secondaries fringed with white at the ends, the inner ones broadly margined with sandy-buff; centre tail-feathers black, with a white base, the rest of the feathers white for more than the basal half, the end of the tail black, forming a very broad terminal band, the feathers tipped with white; head like the back; a broad streak from the base of the bill to above the ear-coverts, white, the hinder part of this eyebrow sandy-buff; lores black; ear-coverts and under-surface of body isabelline-rufous, paler and inclining to sandy-white on the cheeks and throat; the abdomen and under tail-coverts paler isabelline; axillaries and under wing-coverts creamy-white; quills dusky below, creamy-whitish along the inner web; bill black; feet brownish-black; iris dark brown. Total length, 6·5 inches; culmen, 0·6; wing, 3·8; tail, 2·0; tarsus, 1·2.

Adult Female.—Similar in colour to the male. Total length, 6 inches; wing, 3·75; tarsus, 1·15.

The Isabelline Wheatear may easily be mistaken for the female of the Common Wheatear, but, as Mr. Howard Saunders has pointed out, the broader white lining to the quills will always distinguish it. This is a very good character, and another is the greater length of the tarsus in *S. isabellina*. This is 1·15–1·2 inch in length; whereas *S. œnanthe* never has a tarsus longer than 1·05 inch.

Range in Great Britain.—This species has only occurred once, a specimen having been obtained by Mr. Thomas Mann, near Allonby in Cumberland, on the 11th of November, 1887. The bird was found in a ploughed field, quite alone, and was brought to the Rev. H. A. Macpherson, who showed it to Mr. Howard Saunders, afterwards had it mounted, and then very kindly presented it to the British Museum, where it remains as one of our great treasures in the British saloon.

Range outside Great Britain.—The Isabelline Wheatear is a resident in Palestine and the whole of North-eastern Africa from Egypt to Arabia and Somali-land, and perhaps remains in Masai-land, where it has also been met with. To the eastward its breeding-range extends to Thibet, S.E. Mongolia, Amoorland, and Northern China, but here it is doubtless only a summer visitor, as it is to Afghanistan, Turkestan, Southern Siberia, and the Lower Volga and Asia Minor. The birds which breed in the latter places doubtless winter in N.E. Africa, but the more eastern birds visit Northern India, passing through Gilgit in spring and autumn.

Habits.—According to Mr. C. G. Danford, this Wheatear frequents barren ground, bushy hillsides, and even fir-woods in Asia Minor. The call-note resembles the syllables *zri-zri-zri*, but Mr. Danford also says that its notes are very peculiar, the most striking being a cry resembling that of a Sandpiper, which is uttered as the bird descends, after its hovering flight and Lark-like song.

Nest.—Generally placed in burrows, sometimes at a considerable distance. In construction it resembles that of the Wheatear.

Eggs.—Four or five in number. Pale greenish-blue with the faintest indication of pale brown spots on some of them. Axis, 0·85–0·9 inch; diam., 0·65.

THE BLACK-THROATED WHEATEAR. SAXICOLA STAPAZINA.

Motacilla stapazina, pt. Linn., Syst. Nat., i., p. 331 (1766, ♂ nec. ♀).
Saxicola rufa, Dresser, B. Eur., ii., p. 203, pl. 23 (1874).
Saxicola stapazina, Seeb., Cat. B. Brit. Mus., v., p. 387 (1881); id. Br. B., i., p. 307 (1883); B. O. U. List Br. B., p. 6 (1883); Lilford, Col. Fig. Br. B., pt. i. (1885); Saunders, Man., p. 23 (1889).
Saxicola occidentalis, Salvad. Elench. Uc. Ital., p. 116 (1886).

Adult Male.—Head, neck, and mantle rich sandy-rufous, generally whiter on the forehead; lower back, rump, and upper tail-coverts pure white; scapulars, wing-coverts, and quills black, the former sandy-buff near the back; centre tail-feathers black, with a white base; remainder white, excepting a narrow black tip, which increases in width towards the outermost, where it forms a broad black band at the end, and extends some distance up the outer web; extreme base of forehead, lores, line above and behind the eye, sides of face, cheeks, and upper throat, black; remainder of under surface of body from the middle of the throat downwards rich sandy-rufous; sides of body less distinctly washed with sandy-buff, the abdomen and under tail-coverts creamy-white; axillaries and under wing-coverts black; quills dusky below, ashy-whitish along the inner edge; bill and feet black; iris brown. Total length, 5·7 inches; culmen, 0·55; wing, 3·55; tail, 2·3; tarsus, 0·9.

Adult Female.—Browner than the male, with brown wings and tail; the head and back sandy-brown, the rump and upper tail-coverts white; ear-coverts sandy-rufous; throat ashy-brown with a blackish patch in the middle; lower throat, fore-neck, breast, and sides of body sandy-rufous, the abdomen isabelline. Total length, 5·7 inches; wing, 3·45.

NOTE.—The male of the Black-throated Wheatear is easily distinguished by its sandy-rufous head and back, and white rump, black wings, and black under wing-coverts. The female can be distinguished from the female of *S. œnanthe* by its much smaller size and dark ashy, not whitish, under wing-coverts.

Range in Great Britain.—A male of this Chat, in adult plumage, was shot near Bury, in Lancashire, about the 8th of May, 1875. It was recorded by Mr. R. Davenport, and identified by Mr. Howard Saunders and other ornithologists.

Range outside the British Islands.—There are two forms of Black-Throated Wheatear, one western (*S. stapazina*) and one eastern (*S. melanoleuca*). It is the western bird which has occurred in England, and also in Heligoland, and this bird breeds in Algeria, Morocco, Spain, and the South of France, to about the line of the Loire. Both forms are met with in Italy, and the western bird breeds there, and it is said that intermediate specimens occur between the two races, which some naturalists do not admit to be distinct. The eastern Black-throated Wheatear occurs in Greece and Palestine, and in Asia Minor and South Russia as far as Persia, and winters in N.E. Africa: while the western one winters in West Africa.

Habits.—Resemble those of our Wheatear, the bird inhabiting rocky localities on the hills of Southern Europe, and nesting in the grass, in the shelter of a crevice in the rocks, or in old ruins.

Nest.—Loosely made of moss and grass, and lined with roots and hair.

Eggs.—Four or five in number, of a light blue colour, sprinkled with reddish dots, generally all over the egg, but sometimes forming a ring round the larger end. Occasionally the eggs are spotless. Axis, 0·7–0·8 inch; diam, 0·55–0·6.

THE DESERT WHEATEAR. SAXICOLA DESERTI.

Saxicola deserti, Temm., Pl. Col., iii., pl. 359, fig. 2 (1825); Dresser, B. Eur., ii., p. 215, pl. 27 (1874); Seeb., Cat. B. Brit. Mus., v., p. 383 (1881); id. Br. B., i., p. 304 (1883); B. O. U. List Br. B., p. 7 (1883); Lilford, Col. Fig. Br. B., pt. ii. (1886); Saunders, Man., p. 25 (1889).

Adult Male.—General colour above bright sandy-rufous, overshaded with ashy margins to the feathers, the lower back and rump brighter sandy-rufous, the lower rump and upper tail-coverts creamy-white, washed with sandy-rufous; scapulars like the back; wing-coverts black, the inner, median, and greater coverts white or sandy-white, forming a large wing-patch; rest of the wing black, the inner secondaries edged with sandy-brown; tail-feathers entirely black, with a white base for about one-third the length of the feather; head like the back, or a trifle greyer, with a white line across the base of the forehead extending back over the eye and forming an eyebrow; lores and feathers above the eye, sides of face and ear-coverts, and throat black; remainder of under surface of body sandy-rufous, as also the sides of the body; the centre of the breast, abdomen, and under tail-coverts whiter; axillaries black, tipped with white; under wing-coverts white; quills dusky below, white along the inner web; edge of wing black; bill black; feet and claws black; iris deep brown. Total length, 6 inches; culmen, 0·6; wing, 3·6; tail, 2·5; tarsus, 1·05.

Adult Female.—Differs from the male in wanting the black on the face and throat; the whole upper surface sandy-brown; the upper tail-coverts sandy-rufous; tail as in the male; wings not black, but brown, the feathers edged with sandy-rufous; lores whitish; ear-coverts light rufous; cheeks and entire under surface of body pale sandy-rufous, inclining to isabelline on the abdomen and under tail-coverts; under wing coverts and axillaries white, with dusky bases; quills ashy-brown below, white along the inner edge. Total length, 5·7 inches; wing, 3·5.

NOTE.—The male of the Desert Wheatear is very distinct, but the female might be confounded with the hen of some of the allied species. It may be well to mention, therefore, that it can be distinguished from the females of *S. œnanthe* and *S. stapazina* by its blacker tail, the basal third of which only is white.

Range in Great Britain.—Obtained on two occasions: once near Alloa, in Scotland, on the 26th of November, 1880, and a second near Holderness, on the 17th October, 1885. The former was exhibited before the Zoological Society by Mr. J. J. Dalgleish, and the second by Mr. W. Eagle Clarke.

Range outside the British Islands.—The Desert Chat is an African bird, but has occurred on Heligoland on three occasions, in the month of October in 1856 and 1857, and again on the 23rd of June in 1880. It is a desert-loving species and extends from Northern Africa to Egypt and India, Arabia and Palestine, east to Turkestan. It winters in the plains of Northern India, and a few may even breed there. In Africa its winter range extends as far south as Somaliland.

Habits.—As its name implies, this little Chat is an inhabitant of desert countries, and it is emphatically the Wheatear of the Algerian Sahara. In its habits it resembles the Common Wheatear.

Nest.—Resembles that of the Black-throated Wheatear, and is placed on the ground, either under the shelter of a bush or in a fissure of a rock, and, like our Wheatears, it also nests in burrows.

Eggs.—Greenish-blue, with reddish-brown spots distributed over the whole egg, but rather more closely gathered towards the larger end. Axis, 0·8 inch ; diam., 0·6.

THE FURZE-CHATS. GENUS PRATINCOLA.

Pratincola, Koch, Syst. Baier. Zool., p. 190 (1816).

Type, *P. rubetra* (Linn.).

The genus *Pratincola* forms an intermediate link between the Chats and Flycatchers. The bill is broadened and resembles that of the latter birds, and, as with the *Muscicapidæ*, there are numerous rictal bristles. In the True Chats the bill is narrow and the rictal bristles are few in number and weak ; thus the members of the genus *Saxicola* are more closely allied to the Robins and Redstarts. The Furze-Chats, however, are Muscicapine Chats. They are entirely confined to the Old World and do not extend into the Australian Region proper. In Africa the genus is strongly developed and its members are also found over the greater part of the Palæarctic and Indian Regions as far as Celebes.

THE WHINCHAT. PRATINCOLA RUBETRA.

Motacilla rubetra, Linn., Syst. Nat., i., p. 332 (1766).

Fruticicola rubetra, Macg., Br. B., ii., p. 273 (1839).
Saxicola rubetra, Newt. ed. Yarr., i., p. 344 (1873).
Pratincola rubetra, Dresser, B. Eur., ii., p. 255, pls. 37, 38 (1873); Sharpe, Cat. B. Brit. Mus., iv., p. 179 (1879); Seeb., Br. B., i., p. 312 (1883); B. O. U. List Br. B., p. 7 (1883); Lilford, Col. Fig., Br. B., pt. ii. (1886); Saunders, Man., p. 27 (1889).

Adult Male.—General colour above brown, streaked with blackish-brown centres to the feathers; the rump and upper tail-coverts rather more rufous, the latter with white margins; scapulars like the back, but with a blackish shoulder-spot on the sides of the mantle; wing-coverts blackish, with sandy-brown edges, the inner, median, and greater coverts white, with dusky brown ends, forming a wing-patch; primary-coverts white at base, with blackish tips, forming a speculum; quills dark brown, the primaries white at the extreme base, the secondaries fringed with whity-brown at the ends; centre tail-feathers brown, the remainder white, with the terminal third brown, forming a broad band; crown of head darker than the back, the feathers edged with sandy-buff; a broad white eyebrow, commencing at the nostrils; lores and sides of face blackish, the ear-coverts bronzy-brown; cheeks and chin white, extending on to the sides of the neck; centre of the throat and breast light cinnamon-rufous, as also the sides of the body; centre of breast and abdomen, and under tail-coverts, light sandy-buff; axillaries light cinnamon, with dusky bases; under wing-coverts dusky brown, with whitish edges; quills dusky below, ashy-whitish along the inner web; bill and feet black; iris brown. Total length, 5·4 inches; culmen, 0·5; wing, 3·05; tail, 1·8; tarsus, 0·8.

Adult Female.—Different from the male, and rather browner; the rufous of the throat and sides of the body paler and more orange; the sides of the face not so black, the ear-coverts and cheeks being brown, streaked with lighter brown, with a little blackish along the cheeks. Total length, 5 inches; wing, 3·0.

Young Birds after the Autumn Moult much resemble the old birds, but may always be distinguished by the pale sandy-buff tips to the feathers, traces of which remain till the succeeding spring, and the white wing-patch is very plain. In the autumn the fore-neck has some small black streaks.

Range in Great Britain.—A summer visitant to the British Islands, visiting the North of Scotland, as well as the Orkney and Shetland Islands, and also the Hebrides. In Ireland, however, it is still considered as a rare and local summer visitor.

Range outside the British Islands.—As in Great Britain, the Whinchat is a summer visitor to most parts of Europe, and breeds as far north as the Arctic Circle. It extends eastwards to the Ural Mountains, and its breeding range even to 70° E. long. In the south of Europe, the individuals which stay for the summer season only nest in the mountains. In winter the Whinchat visits North-east Africa, and is frequently to be found in collections from Senegambia and the Gold Coast.

Habits.—The Whinchat is one of the prettiest and most engaging of our summer visitors, but is seldom noticed by anybody but the ornithologist; and yet it is by no means uncommon. It is found in a variety of situations, in the open moorland, the fallows, and the grass fields before the hay-season begins. Wherever it is found its habits are very similar, and it may be observed on the open commons, sitting on the top of a furze-bush like a Stonechat, or flying over the standing grass, and perching on a thistle or small bush in the middle of the field; or it may be found on the slope of a hill, over which are scattered furze-bushes. On its first arrival in the early part of May, the Whinchat may be seen in pairs, but after the nesting season the female is seldom observed, and there is no more difficult nest to discover. The male is observed on the top of a bush, and from its actions one may fancy that the nest is below; this generally turns out to be the case. The bird, however, will do everything in its power to mislead, flying off rapidly and reappearing at the top of a neighbouring bush, uttering its note, *u-tack*, *u-tack*. This is a very good rendering of the note of the Whinchat and Stonechat, both of whose calls resemble the sound of two stones being clinked together.*

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* We notice that Mr. Seebohm says that the Whinchat is called "U-tick," from its note, in some country districts. In Leicestershire, in our young days, this name was always applied to the Wheatear.

Then the male bird disappears altogether for a time, and the observer fancies that he must have been on the wrong scent altogether, when, after a long wait, the bird reappears on the top of the bush where it was first seen. On tapping the furze, a little brown object may be observed, scudding like the wind, and disappearing behind the first shelter it can find, or flying to a distant hedge, as if the nest were there. This is the female bird, and the nest is certainly located, but even then it is not visible. Only those who have taken several Whinchats' nests under such circumstances know the difficulty with which the nest is finally discovered, for, although it may be ultimately found, it is necessary first to spot the "run" by which it is approached. As with the Grasshopper-Warbler, this is sometimes two feet in length, and at the end of it is the nest with the eggs. It is not always that the Whinchat builds in situations so difficult to discover, as sometimes the nest is built amongst the grass, far away from any hedge or bush.

In the autumn the old birds are seldom or never observed, but the young birds are common, pursuing their insect prey in the harvest-fields in the country, or frequenting the pastures near the sea-shore, where they perch upon the thistles or low bushes, or on the hedges which line the fields. The birds may often be seen flying after insects in the air, after the manner of Flycatchers, and they are very active in pursuit of gnats and other flies, as evening approaches.

Nest.—Composed of dry grass, with a very little moss, and a few straws on the outside. The interior cup is more neatly woven, with finer grass and horsehair.

Eggs.—Four or five in number, greenish-blue, faintly speckled with reddish-brown, the spots of the latter colour almost invisible, but sometimes collecting at the larger end of the egg and forming a zone. Axis, 0·7–0·8 inch; diam., 0·55–0·6. It may be mentioned that the spotted eggs seem to be rather larger and paler blue than the unspotted ones.

THE STONECHAT. PRATINCOLA RUBICOLA.

Motacilla rubicola, Linn., Syst. Nat., i., p. 332 (1766).
Fruticicola rubicola, Macg., Br. B., ii., p. 279 (1839).

Saxicola rubicola, Newt. ed. Yarr., i., p. 339 (1873).

Pratincola rubicola, Dresser, B. Eur., ii., p. 263, pls. 39, 40 (1873); Sharpe, Cat. B. Brit. Mus., iv., p. 185 (1879); Seeb., Br. B., i., p. 317 (1883); B. O. U. List Br. B., p. 8 (1883); Lilford, Col. Fig. Br. B., pt. ii. (1886); Saunders, Man., p. 29 (1889); Wyatt, Br. B., pl. 2, figs. 1, 2 (1894).

Adult Male.—General colour above black, generally with some obsolete sandy-buff edges to the feathers, these being lost only in the height of the breeding-season; upper tail-coverts white, spotted with black; wing-coverts black, the inner, median, and greater coverts white, forming a large wing-patch; primary-coverts and quills blackish-brown, with sandy brown margins; tail-feathers blackish-brown; head, sides of face, and throat black, with a broad white patch on the sides of the neck, extending from behind the ear-coverts to the shoulder; fore-neck and breast orange-chestnut, inclining to pale cinnamon on the sides of the body, the feathers being blackish, with pale cinnamon ends; the abdomen and under tail-coverts isabelline-buff; thighs light brown; axillaries white, blackish towards the base; under wing-coverts black, with white edges; bill and feet black; iris brown. Total length, 5·3 inches; culmen, 0·5; wing, 2·7; tail, 1·8; tarsus, 0·9.

Adult Female.—Different from the male, and lacking the black on the head; the upper surface dark sandy-brown, streaked with black centres to the feathers; the white wing-patch not so large, and the upper tail-coverts rufous, centred with black, not white as in the male; tail-feathers dark brown, with narrow whitish edges; head like the back, and similarly streaked; eyelid whitish; lores dusky; ear-coverts dark brown; throat ashy-whitish, with a large black patch on the lower throat; sides of neck with a small white patch, much less than in the male; remainder of under-parts from the fore-neck downwards orange-chestnut, the centre of the breast and abdomen isabelline. Total length, 5 inches; wing, 2·55.

Young.—Dark brown above, spotted with triangular buff centres to the feathers, which have also blackish edges; rump and upper tail-coverts rufous, spotted with black; head darker than the back, and lined with buff; under surface of body tawny-buff, mottled with brown spots on the lower throat and chest.

NOTE.—The black breast of the male Stonechat with its large white neck-spot always serve to distinguish the bird from the Whinchat, which has also a white base to the tail, very conspicuous when the bird is flying; whereas the Stonechat has only a little white spot, formed by the upper tail-coverts. The hen Stonechat certainly resembles the Whinchat more closely, but is darker in appearance, has no white on the tail, and has a large black spot on the lower throat; the breast and abdomen rufous, instead of creamy-buff.

Range in Great Britain.—The Stonechat is generally distributed over the British Islands, but is decidedly a local bird. It is generally resident, but is also a migrant to a large extent.

Range outside the British Islands.—A local bird in most parts of Europe, being more common in the south. Mr. Howard Saunders records it as breeding in Southern Spain, even in the hot plains below Seville; and it is a species which occurs throughout the Mediterranean countries. Throughout Central Europe it is a local bird, and does not extend nearly so far north as the Whinchat, its northern range being almost bounded by the Baltic, with the exception of Southern Sweden, where the Stonechat is also found. Eastwards it extends to the Volga, but its breeding-range is limited, according to Mr. Seebohm, to 50° W. long. From the Petchora valley eastwards through Siberia to China and Japan, and southwards to India and the Burmese countries, our Stonechat is represented by an allied species, *Pratincola maura*, with unspotted white upper tail-coverts and entirely black axillaries. In winter the Stonechat visits Senegambia.

Habits.—The ways of the present species are very like those of the Whinchat, but it is more of a heath-frequenting bird than the last-named species. It is, in fact, not seen so much in the pasture-land or grass-fields, and, being only migratory to a small extent, it does not frequent the coast-lands to the same extent as the Whinchat. Nevertheless, the two species are often found side by side, and they nest in the same districts. Their note is similar—*u-tack* well expresses it—and they have the same habits of sitting on the top of a furze-bush and flying from one bush to another, when they want to deceive an intruder as to the position of their nest. Owing to the white patch on the neck, the bird is more easily observed than the Whinchat, and the females of both species are equally shy, and adopt the same tactics when driven from their nest. The Stonechat, like its ally, catches insects in the air, and sometimes even captures butterflies on the wing; but it is often seen on the ground, where it picks up worms and grubs.

Nest.—Always on the ground and well concealed, generally with a "run" extending for some distance, and serving to make the discovery of the nest still more difficult. It is rather more roughly constructed than that of the Whinchat, and the materials are coarser, consisting of dry grass and rootlets, with a little moss and horsehair. The lining consists of finer grass and rootlets, with a little hair and an odd feather or two.

Eggs.—Four to six in number. The ground-colour is pale bluish-green, and the spots are light reddish-brown, but much larger and more distinct than in the eggs of the Whinchat. They are often found collected towards the larger end of the egg, where they form a zone or completely cloud the larger end. Some of the clutches incline somewhat to olive-greenish. Axis, 0·75–0·8 inch; diam., 0·5–0·6.

THE ACCENTORS. FAMILY ACCENTORIDÆ.

The Accentors are for the most part dwellers among the rocks, but some of them, like our Common Hedge-Sparrow, frequent the lower ground, and are amongst our most familiar birds in gardens and in the neighbourhood of houses. They differ from the *Turdidæ* in having the tarsus scutellated, as in the Tits, with which Mr. Seebohm has actually associated them. In other characters, however, such as the shape of the bill and its rictal bristles, the Accentors are allied to the Robins and Redstarts, while the spotted character of the young proves their affinity with the family of the *Turdidæ*. The Hedge-Accentors differ from most of the latter in having a very rounded wing, but this peculiarity is not shared by the Alpine Accentors. The family contains the two genera *Tharrhaleus* and *Accentor*. The former comprises the "Hedge-Sparrows," like our English bird, and all the species of the genus have a small and blunt wing, with the secondary quills almost as long as the primaries. There are six species in the Himalayas, three European, another Central Asian, and a third still more eastern representative of the genus in Japan.

The species of the genus *Accentor*, which has a longer and more pointed wing, with the secondaries not nearly equalling the primaries in length, are found in the mountains of Asia and Europe, extending from Manchuria throughout the Altai and Himalayan systems to the Caucasus and the mountains of Central and Southern Europe.

THE HEDGE-ACCENTORS. GENUS THARRHALEUS.

Tharrhaleus, Kaup, Natürl. Syst., p. 137 (1829).
Type, *T. modularis* (Linn.).

The characters which distinguish this genus from *Accentor* have been alluded to above. The bill is about half the length of the head, rather wide at the base, and tapering laterally towards the centre, and ending in a somewhat fine point; it has also a slight notch, and is furnished with rictal bristles, which, however, are few in number and weak. The Hedge-Sparrows lay blue eggs like Redstarts and Chats, but differ from these birds in having the sexes alike in colour, and in other structural characters.

THE HEDGE-SPARROW. THARRHALEUS MODULARIS.

Motacilla modularis, Linn., Syst. Nat., i., p. 329 (1766).
Accentor modularis, Macg., Br. B., ii., p. 251 (1839); Newt. ed. Yarr., i., p. 301 (1873); Dresser, B., Eur., iii., p. 39, pl. 101 (1873); Sharpe, Cat. B. Brit. Mus., vii., p. 649 (1883); B. O. U. List. Br. B., p. 22 (1883); Seeb., Br. B., i., p. 497 (1883); Lilford, Col. Fig. Br. B., pt. v. (1887); Saunders, Man., p. 85 (1889); Wyatt, Br. B., pl. xv., fig. i. (1894).

Adult Male.—General colour above brown, streaked with broad blackish-brown centres to the feathers; lesser wing-coverts uniform ashy-brown; median wing-coverts blackish-brown, with ashy-brown edges; greater coverts and inner secondaries dark brown, edged with rufous, the latter with ashy-white tips; bastard-wing, primary-coverts and quills dark brown, the latter with paler brown margins; rump and upper tail-coverts uniform olive-brown; tail-feathers dark brown, the two centre ones paler; crown of head and hind-neck dull slaty-brown; lores dusky; ear-coverts reddish-brown with whitish shaft-streaks; sides of neck, cheeks, throat and breast slaty-grey, becoming paler on the lower breast, and shading off into dull white on the abdomen; sides of upper breast uniform olive-brown; sides of body and flanks brown, the latter streaked with blackish-brown centres to the feathers; under tail-coverts whitish with brown centres; axillaries and under wing-coverts ashy-grey; quills dusky brown below, ashy along the inner edge; bill dark brown, the lower mandible paler; feet light brown; iris brown. Total length, 5·5 inches; culmen, 0·5; wing, 2·75; tail, 2·4; tarsus, 0·85.

Adult Female.—Similar to the male in colour. Total length, 5·6 inches; wing, 2·6.

Young.—Similar in plumage to the adult, but much more mottled, with black centres and paler tips to the feathers; the external aspect of the wings more rufous; the hind-neck spotted with ochreous buff; throat ashy-grey, spotted with dusky; throat and chest and sides of body ochreous-buff, with triangular spots of blackish-brown; breast ashy-white.

Range in Great Britain.—A common resident throughout the British Islands, occurring and breeding everywhere, excepting in some of the Hebrides, the Orkneys, and Shetlands. Large numbers occur on migration, especially on our eastern coasts, and the species is also a winter visitant to the Orkney Islands.

Range outside the British Islands. — Breeds nearly everywhere throughout Europe, excepting in the extreme north, reaching to 70° lat. in Scandinavia, to Archangel in Western Russia, and to about 60° in the Ural Mountains. In the south of Europe it nests only on the mountains, and is principally known as a winter visitor to the Mediterranean countries; but it has been recorded by Heuglin as wintering as far south as Arabia Petræa. In Palestine, according to Canon Tristram, it is a resident.

Habits.—Although not a real Sparrow, as its English name would suggest, the familiar title by which this little bird is universally known must be preferred to the more correct one of Hedge-Accentor, which properly describes its relationships. It has been too long known as the "Hedge-Sparrow" for any advantage to accrue from a change of English name. In all other respects except that of the similarity of colouring of the upper surface, it is quite different from the Sparrows, and as regards voice, nesting-habits, colour of eggs, etc., it has nothing in common with the latter birds.

Like the Robin, the Hedge-Sparrow seeks the society of man, and is as frequent a pensioner in winter as that well-known type of Avian familiarity. The nest, too, is frequently to be found in our gardens, and is one of the first to be built in the year, as it is sometimes found as early as March. A clipped yew-hedge is a favourite shelter for the nest, but it is placed in all kinds of situations, though never at any great height from the ground. Hedge-rows and tangled thickets on commons are also selected as nesting-sites : we have also found the nest in furze-bushes, while it is sometimes placed in ivy or even against a tree-trunk. The late Robert Gray mentions his having found a nest in a cave on Ailsa Craig, placed in a ledge of rock at the base of a tuft of hart's-tongue fern, the floor of the cave being covered with water.

The food of the Hedge-Sparrow consists almost entirely of worms and insects, but it will also, like the Robin, occasionally feed on grain in the winter. It sings all through the year, a poor little song, but cheerful enough when heard through the dismal days of winter, when the bird frequents the neighbourhood of houses.

Nest.—Composed almost entirely of moss, with a few sticks, roots, and dry grass, but the chief material used is moss, which sometimes forms the lining. Very often, however, the latter consists of wool with hair and feathers.

Eggs.—From four to six in number. Entirely greenish-blue, without any spots. The shell is rough and not so shiny or so brittle as the egg of the Redstart. Axis, 0·7–0·8 inch; diam., 0·55–0·6.

THE TRUE ACCENTORS. GENUS ACCENTOR.

Accentor, Bechst., Orn. Taschenb., i., p. 191 (1802).

Type, *A. collaris* (Scop.).

As has already been explained, the Alpine Accentors are mountain-loving birds, with a differently formed wing to the Hedge-Sparrows. As in the latter birds the sexes are alike, but they appear to have a winter plumage, when the feathers are paler-edged, and the summer plumage is gained by the abrasion of these pale margins.

THE ALPINE ACCENTOR. ACCENTOR COLLARIS.

Accentor collaris (Scop.), Newt. ed. Yarr., i., p. 296 (1871); Dresser, B. Eur., iii., p. 29, pl. 99 (1873); Sharpe, Cat. B., vii., p. 661 (1883); B. O. U. List Brit. B., p. 23 (1883); Lilford, Col. Fig., Brit. B., pt. vii. (1888); Saunders, Man, p. 87 (1889).

Accentor alpinus, Bechst.; Macg., Brit. B., ii., p. 258 (1839); Seeb., Brit. B., i., p. 501 (1883).

Adult Male.—Light ashy-grey above, all the feathers broadly streaked with black down the centre; rump more uniform ashy; scapulars externally rufous, like the inner secondaries, which are also broadly edged with rufous; lesser wing-coverts ashy; median and greater coverts black, tipped with white, the latter externally ashy-olive; quills blackish, the secondaries tipped with whity-brown, and externally whity-brown or light rufous, the innermost ones rufous along both webs; tail-feathers dark brown, edged with ashy-brown, with a white tip to the inner web of the outer feathers, rufous on the others; head and neck like the back, and streaked with blackish centres to the feathers, with a faintly indicated pale eyebrow; sides of face and sides of neck ashy-grey, as well as the fore-neck and chest, enclosing the white cheeks and throat, which form a white gorget, spotted or barred with lines of black; breast and abdomen light ashy, as also the thighs, the vent whiter; sides of body and flanks uniform cinnamon-brown, the flanks edged with white and centred with blackish-brown; under tail-coverts white, with blackish centres; under wing-coverts and axillaries ashy, washed with rufous, the edge of the wing barred with black and white; bill blackish-brown, the base yellow; feet reddish-brown; iris brown. Total length, 6·8 inches; culmen, 0·55; wing, 4·05; tail, 2·5; tarsus, 1·0.

Range in Great Britain.—A rare visitor, but one of which many authentic occurrences have been registered. The first instance happened as long ago as August, 1817, and two more birds were seen in the gardens of King's College, Cambridge, in 1822. Other records refer to the occurrence of the species in various places in England and Wales: in Suffolk, Somersetshire, Devonshire, Gloucestershire, Yorkshire, Sussex, and lastly, the bird was observed by Mr. Howard Saunders himself on Snowdon on the 20th of August, 1870.

Range outside the British Islands.—The Alpine Accentor is an inhabitant of all the mountain ranges of Southern Europe, from Spain to Greece, and thence through Asia Minor and the Caucasus into Northern Persia. It has occurred as a straggler in the north of France, Belgium, Northern Germany, and even Heligoland, while it also is found nearly every autumn in the cliffs which fringe the River Loire.

Habits.—Like the Hedge-Sparrow of the gardens, the Alpine Accentor is a tame bird in the mountains which it frequents; here it builds its nest on the higher grounds, descending in winter into the low valleys. Its food consists of insects and their larvæ, but in winter it feeds upon seeds. The song is said to resemble that of a Lark, and the bird ascends for thirty or forty feet into the air and descends singing.

Nest.—Made of dry round stems of grass, mixed with fine roots and lichens, and sometimes lined with moss, wool, or hair. It is placed on the ground under an overhanging bush or rhododendron-tree. (*Cf.* Seebohm l.c.)

Eggs.—Pale greenish-blue, without any spots. Axis, 0·9–0·95 inch; diam., 0·65–0·7.

THE DIPPERS. FAMILY CINCLIDÆ.

The Dippers or Water-Ouzels are comprised in a single genus *Cinclus*, and they might very well be called Water-*Wrens*. No one can examine the nest of the Dippers without recognising at once how similar they are in appearance and situation to that of a large Wren's nest, and there are other Wren-like characters to be observed in the Dippers. Not only do the short and rounded wings proclaim the affinity of the two families, but the absence of rictal bristles also serves to unite them. The Dippers are found in the mountains of Europe, Asia, and North America. They also occur in Central America and extend down the Andes from the United States of Columbia to Peru and Tucuman.

THE DIPPERS OR WATER-OUZELS. GENUS CINCLUS.

Cinclus, Bechst., Orn. Taschenb., i., p. 206 (1802).

Type, *C. cinclus* (Linn.).

As there is but a single genus *Cinclus*, the remarks made above under the heading of the family, refer equally to the genus.

THE DIPPER. CINCLUS AQUATICUS.

Cinclus europæus, Macg., Br. B., ii., p. 50 (1839).
Cinclus aquaticus, Bechst.; Newt. ed. Yarr., i., p. 241 (1872); Dresser, B. Eur., ii., p. 167, pl. xix. (1874); Sharpe, Cat. B. Brit. Mus., vi., p. 307 (1881); B. O. U. List Br. B., p. 23 (1883); Seeb., Hist. Brit. B., i., p. 253 (1888); Lilford, Col. Fig. Brit. B., pt. xi., (1889); Saunders, Man., p. 89 (1889); Wyatt, Br. B., pl. v. (1894).

(*Plate XXVI.*)

Adult Male.—General colour above dark grey, all the feathers edged with black; wing-coverts and quills blackish-brown, with grey margins, the secondaries more broadly edged; tail-feathers dark brown; crown of head, hind-neck, and sides of neck, sides of face and ear-coverts, clear chocolate-brown; cheeks, throat, fore-neck, and chest, pure white; above and below the eye a spot of white; breast and remainder of under surface of body deep rufous, shading off into slaty-brown on the sides of the body; abdomen, thighs, vent, and under tail-coverts, blackish, the latter tipped with rufous; under wing-coverts dark brown, washed with slaty-grey, the axillaries tipped with white; quills dark brown below, ashy-fulvous along the inner web; bill black; feet bluish-grey, tinged with brown;

iris pale brown, with a ring of black in the middle. Total length, 7 inches; culmen, 0·85; wing, 3·55; tail, 2·15; tarsus, 1·05.

Adult Female.—Like the male in colour, but rather browner, and not so ashy on the sides of the body. Total length, 6·6 inches; wing, 3·3.

Young.—More mottled than the adults, the grey feathers of the upper surface having blackish margins; wings blackish, with narrow whitish edgings to the coverts and quills; head and neck somewhat browner than the back, the feathers margined with black; cheeks and entire under surface of body white, with dusky brown or blackish edges to the feathers; flank feathers ashy-grey, with black margins; under tail-coverts blackish, with rufescent streaks and tips.

Young in Autumn Plumage.—After the first moult the young birds much resemble the adults, but are much darker, especially the head and neck, which are deep chocolate-brown. The rufous on the breast is not so bright, and is more brownish in tint; it is more confined to the breast, and does not extend so far on to the abdomen as in the adult bird.

Range in Great Britain.—A bird of the mountain streams, found in Devonshire and Cornwall, as well as Somersetshire, throughout Wales, and northward from Derbyshire in suitable localities to Scotland, throughout which kingdom it is universally distributed, as well as in the Outer Hebrides. In Ireland it is also found in the same situations as in England and Scotland. To the south-eastern counties of England the Dipper is chiefly an occasional visitor, though Mr. Robert Read has recorded his finding of the nest in Surrey (Zool., 1893; p. 308).

Range outside the British Islands.—The red-breasted form of Dipper which inhabits Great Britain is found within a very limited area on the continent of Europe. It appears to extend over France and Germany in suitable localities only, and it is also found in Holland and Belgium. In the Carpathians and the Alps, as well as in the Pyrenees, it is replaced by a race known as *Cinclus albicollis*, which is a paler and greyer bird, with the rufous on the breast extending on to the abdomen.

Habits.—The Dipper, or "Water-Ouzel," as it is called in England, the "Water-Crow" of Scotland, is a bird of the mountain streams in the southern part of its range, and of burns and rivers in the north. It is everywhere a shy and watchful bird, and, except in the breeding season, appears to be solitary; at least, it is somewhat rare to see two birds in company. By hiding behind a rock near the Dipper's haunts, however, it is possible to observe the bird, and none are more interesting in their ways of life. They may be seen scudding over the surface of the water with a rapid flight and a vigorous beating of the wings, something like that of a Kingfisher, until they alight on a rock or large stone in the middle of the stream. The white breast of the bird stands out in bold relief, and, after pausing for a moment, it commences to edge to the side of the rock, and either walks deliberately into the water or disappears suddenly beneath the surface, seeking its food at the bottom of the stream. There the bird finds its insect food, consisting of larvæ, caddis-worms, water-beetles, and small molluscs. The accusation brought against the Dipper of devouring the ova of trout has been upheld by some and denied by other naturalists. That the Germans believe in its truth has been proved during the last few years by the war which has been waged against the birds in the Rhine Provinces, where hundreds have been slaughtered.

Nest.—A bulky structure of moss, like an overgrown Wren's nest, tucked into an opening in the rocks or under the roots of a tree, overhanging the water. Notwithstanding the size of the nest, it is exceedingly difficult to discover, owing to the way in which it assimilates to the surroundings. The entrance is very low down, and can generally only be seen from below. Mr. Seebohm says that the real nest is placed inside this dome of moss, and one which he pulled to pieces was constructed of "dry grass, the roots of heather, and slender birch-twigs, and lined with a profusion of leaves, layer after layer of birch- and beech-leaves, and, as a final lining, a mass of oak-leaves, laid on one another, like leaves in a book. The outside dome was so closely woven together of moss, with here and there a little dry grass, as not to be torn to pieces without considerable force; and the inner nest was so tightly compacted that, when the materials were pulled to pieces, one could hardly believe that they could be made to take up so little room. Outside it appeared nothing but a large oval ball of moss, about 11 inches long, 8 inches wide, and about as high."

Eggs.—Four or five in number. Pure white, without any spots, but not glossy as are the eggs of Kingfishers. The shape varies a good deal. Axis, 1·0–1·1 inch; diam., 0·7–0·75. (Plate xxix., fig. 1.)

THE BLACK-BELLIED DIPPER. CINCLUS CINCLUS.

Sturnus cinclus, Linn., Syst. Nat., i., p. 200 (1766).
Cinclus melanogaster, Dresser, B. Eur., ii., p. 177, pl. xx. (1873); B. O. U. List Brit. B., p. 24 (1883); Lilford, Col. Fig. Brit. B., pt xi. (1889); Saunders, Man., p. 89 (1889).
Cinclus cinclus, Sharpe, Cat. B. Brit. Mus., vi., p. 311 (1881).

Adult Male.—Similar in colour to *C. aquaticus*, but differing in having the breast dark chocolate-brown or black, not rufous, but sometimes having a slight tinge of rufous across the upper part of the breast. Total length, 7·5 inches; wing 3·8.

Adult Female.—Similar to the male in colour. Total length, 7·2 inches; wing, 3·5.

Range in Great Britain.—The Black-bellied Dipper has occurred in the eastern counties of England. Many naturalists consider that the two forms are not specifically distinct. It has been pointed out by Mr. Seebohm that there is a variation in depth of colour between examples found at different heights in the Peak district of Derbyshire, those from 1,500 feet elevation being darker than those from the lower elevations. Mr. Howard Saunders also observes that examples from the upper portions in the narrow valley of the Pyrenees above Luz and from the lofty Cantabrian Mountains, in N.W. Spain, are undistinguishable from Scandinavian specimens, and this is certainly the case with a specimen from Coimbra, in Portugal, sent to the British Museum by Dr. Vieira.

The Black-bellied form of Dipper inhabits Scandinavia and Northern Russia, occurring also in Denmark, Northern Germany, and Holland. It has also visited Heligoland.

Habits.—The same as those of *C. aquaticus.*

Nest.—Like that of *C. aquaticus.*

Eggs.—Not distinguishable from those of *C. aquaticus.*

THE WRENS. FAMILY TROGLODYTIDÆ.

This family includes a number of small species of birds largely represented in the New World, and distributed extensively over the Palæarctic Region and the Himalayan system of the Indian Region. They have been placed by some ornithologists with the Creepers, which they resemble in the colour of their eggs and also in the fact of the absence of rictal bristles at the base of the bill. They have stout legs and a very rounded Timeliine wing, concave and fitting close to the body.

THE TRUE WRENS. GENUS ANORTHURA.

Anorthura, Rennie, ed. Mont. Orn. Dict., 2nd ed., p. 570 (1831).
Type, *A. troglodytes* (Linn.).

THE WREN. ANORTHURA TROGLODYTES.

Motacilla troglodytes, Linn., Syst. Nat., i., p. 337 (1766).
Anorthura troglodytes, Macg., Br. B., iii., p. 15 (1840); Sharpe, Cat. B. Brit. Mus., vi., p. 269 (1881).
Troglodytes parvulus, Newt. ed. Yarr., i., p. 460 (1873); Dresser, B. Eur., iii., p. 219, pl. 124 (1873); B. O. U. List Br. B., p. 29 (1883); Seeb., Hist. Br. B., i., p. 505 (1883); Lilford, Col. Fig. Br. B., pt. iv. (1887); Saunders, Man., p. 107 (1889); Wyatt, Br. B., pl. iii., fig. 1 (1894).

(*Plate XXVII.*)

Adult Male.—General colour above dark brown, becoming more rufous towards the lower back and rump, and dull chestnut on the upper tail-coverts; lesser and median wing-coverts dusky brown, with tiny whitish spots at the end of the latter; greater-coverts, bastard-wing, primary-coverts, and quills dusky brown, externally dull chestnut, barred with blackish, the primaries chequered with whitish interspaces, and the innermost secondaries barred across with blackish and dull chestnut; tail-feathers dull chestnut, barred across with dusky blackish; head like the back; lores and sides of face dull ashy, the ear-coverts washed with brown; eyebrow ashy-grey; cheeks and upper throat ashy; the lower throat and breast ashy, slightly washed with brown; sides of body reddish-brown; barred with dusky, especially distinct on the lower flanks and under tail-coverts, the latter having white tips to the feathers; axillaries brown; under wing-coverts ashy, washed with brown; quills dusky below, ashy along the inner web; bill dark brown, paler below; feet paler brown; iris dark brown. Total length, 4·2 inches; culmen, 0·5; wing, 1·85; tail, 1·2; tarsus, 0·7.

Adult Female.—Similar to the male. Total length, 4·0; wing, 1·85.

Young.—Very like the adults in colour, but has the wings and tail less distinctly banded; the breast more rufescent, the feathers also obscurely mottled with brown edgings; abdomen also rufescent, and with scarcely any dusky bars.

Range in Great Britain.—Generally distributed throughout the whole of the three kingdoms. The birds which inhabit the outlying islands of Scotland are larger than those found on the mainland. Thus the Wrens of the Shetlands are slightly larger than those found in Great Britain, while the S. Kilda Wren, *A. hirtensis*, is larger still, and approaches in size *A. borealis* from the Faeroe Islands. A considerable migration takes place every autumn on our eastern coasts.

Range outside the British Islands.—Distributed generally over Europe, extending as high as 64° N. lat. in Scandinavia and nearly as high in Northern Russia, its breeding range being limited by 110° E. longitude. It is found in Northern Africa, and occurs in Asia Minor and Northern Palestine as far as the Caucasus and Northern Persia.

Habits.—The Wren is one of our most familiar species, and is as great a personal favourite as the Robin. Its familiarity justifies the affection with which it is regarded, for, like the Robin, it is one of those tame little visitors which frequent the garden and the neighbourhood of houses in winter, where it will often visit the verandah or dodge in and out among the creepers which skirt the window-frames, in search of the tiny insects on which it feeds. In its actions the Wren seems to resemble the Timeliine birds of Tropical Asia, and to be out of place in the temperate and cold climates of the more northern countries. It creeps about in the shrubberies and thick undergrowth, frequents the bottoms of hedges, and searches diligently among the fallen trees, especially if the latter be covered with ivy. Occasionally it comes into view and perches on a fence to utter its song. This is a rattling performance, wonderfully loud for the size of the bird, which can always be recognised by its small size and by the way in which its tail is erected at right angles to its back.

The nest is placed in all kinds of situations, and it is curious to notice that a number of nests, apparently finished off with great care, are not inhabited by the birds. These "cock" nests, as they are called, do not appear to be lined with feathers like the real nesting home of the bird, and are supposed to serve as roosting-places. The number of them found in a small area, unlined, and never containing eggs, has suggested the idea that the Wrens desert a nest into which a finger has been inserted, and therefore many people have supposed that these were deserted nests. The other explanation, however, seems to be the more plausible one, that the unlined nests are either roosting-places or are built to draw off attention from the real nest.

Nest.—A large structure compared with the size of the little architects, composed chiefly of moss, but largely constructed of materials belonging to the surroundings of the nest. Thus, if a moss-grown situation be chosen, green moss is employed; if amongst dead leaves, then leaves are chosen, and thus, by the assimilation of the nest to the surroundings it escapes detection, and is never easy to find, except when the bird builds in the ivy at the top of a small stump, or in the head of a savoy cabbage, or in some such conspicuous place.

Eggs.—From four to six in number, sometimes as many as eight or nine, or even more. Ground-colour china-white, with a few reddish-brown spots, intermixed with tiny dots, and generally congregated at the larger end, while in some specimens the dots are sprinkled all over the egg. Axis 0·65–07 inch; diam., 0·5–0·55. (Plate xxx., fig. 4.)

THE S. KILDA WREN. ANORTHURA HORTENSIS.

Troglodytes hirtensis, Seebohm, Zoologist, 1884, p. 333; id. Br. B., iii., p. 661 (1885).

Adult Male.—Similar to *A. troglodytes*, but larger. It is supposed to be more distinctly barred on the upper surface, and to have the throat and breast free from any spots. Culmen, 0·55; wing, 2·1; tail, 1·5; tarsus, 0·75.

NOTE.—The larger size of the eggs of the S. Kilda Wren is the only test of the difference between it and the bird of the mainland, which we are able to recognise. The characters of the barred back and the unspotted throat are not really features for the separation of the island form, as they are equally found in examples from other parts of Europe.

Habits.—Mr. Dixon, who brought from S. Kilda the specimens originally described by Mr. Seebohm, gives the following account of the bird:—"I had not been on S. Kilda long before the little bird arrested my attention, as it flew from rock to rock, or glided in and out of the crevices of the walls. It differs very little in its habits from its congener; only, instead of hopping restlessly and incessantly about brushwood, it has to content itself with boulders and walls. It was in full song, and its voice seemed to me louder and more powerful than that of the Common Wren. I often saw it within a few feet of the sea, hopping about the rocks on the beach; and a pair had made their nest in the wall below the manse, not thirty yards from the waves. I also saw it frequently on the tops of the hills, and in many parts of the cliffs. It was especially common on Doon, and its cheery little song sounded from all parts of the rocks.

"As there are no bushes nor trees on S. Kilda (except those the microscopic eye of a botanist might discover), the Wren takes to the luxuriant grass, sorrel, and other herbage growing on the cliffs, and picks its insect food from them. It also catches spiders and the larvæ of different insects in the nooks and crannies which it is incessantly exploring. It is a pert, active little bird, by no means shy; and I used to watch a pair that were feeding their young in a nest not six yards from our door. Its breeding season must commence early in May, for the young were three parts grown by the beginning of June."

Nest.—According to Mr. Dixon the nest is made in one of the numerous "cleats," or in a crevice of a wall, or under an overhanging bank. The nest is exactly similar to that of the Common Wren, and abundantly lined with feathers.

Eggs.—Similar to those of *A. troglodytes*, but slightly larger, and with some of the reddish spots somewhat bolder and more strongly indicated than is usual in the eggs of the Common Wren. Axis, 0·75; diam., 0·6.

THE BULBULS. FAMILY PYCNONOTIDÆ.

These birds constitute an assemblage of Thrush-like forms found in the tropics, and foreign to a northern country like Great Britain. They are usually crested, have great powers of song, are arboreal in their habits, and non-migratory.

THE TRUE BULBULS. GENUS PYCNONOTUS.

Pycnonotus, Boie, Isis, 1826, p. 973.

Type, *P. capensis* (Linn.).

THE SOUTH AFRICAN GOLD-VENTED BULBUL. PYCNONOTUS CAPENSIS.

Turdus capensis, Linn., Syst. Nat., i., p. 295 (1766).
Pycnonotus capensis, Newt. ed. Yarr., i., p. 247 (1872); Dresser, B. Eur., iii., p. 361, pl. 143, fig. 2 (1876); Sharpe, Cat. B., vi., p. 130 (1881); B. O. U. List Br. B., p. 36 (1883); Seeb., Br. B., i., p. 251, note (1883): Saunders, Man., p. 136, note (1889).

Adult.—Brown, with the head and throat a little blacker; under tail-coverts yellow. Total length, 7·6 inches; wing, 3·65.

NOTE.—There are many species of birds in the British List which might well be struck out in future works on our native

Avi-fauna. Some have been included by mistake, while others no have doubt been recorded on evidence which should have secured their suppression. The "Gold-vented Thrush," as it has been called for so many years in works on British Ornithology, belongs to a group of birds of the most stay-at-home character, and the nearest inhabitant to our shores is the Bulbul of Algeria, *Pycnonotus barbatus*, which is not one of the gold-vented section of the genus. A specimen of a *Pycnonotus* is said to have been shot near Waterford in January, 1838, by Dr. R Burkitt, and skinned by him. It turns out to be the Bulbul of South Africa, *P. capensis*, one of the most restricted of all the species in its range, being in fact confined to the Cape Colony below the Karroo country. There is not the slightest probability of the bird's having migrated from the Cape to Ireland, and the supposition that it might have been an escaped specimen might have been entertained but for the fact that an "Eagle-Owl" shot in Ireland by the same gentleman, turned out to be another South African species, viz., *Bubo maculosus*. There seems, therefore, to be some mistake connected with the occurrence of these African species in Ireland, and the birds had better be dropped out of the British List altogether.

THE FLYCATCHERS. FAMILY MUSCICAPIDÆ.

The Flycatchers evince their affinity with the Thrushes by the mottled character of the young birds, but they have flatter and broader bills, and are remarkable for the number and strength of their rictal bristles, and for having the nostrils always more or less covered with hairs; the culmen is generally provided with a keel.

They are entirely birds of the Old World, and are distributed over all four regions, being found even in the Pacific Islands. The so-called "Flycatchers" of America are the Tyrant-birds, and belong to a totally different family, *Tyrannidæ*.

THE TRUE FLYCATCHERS. GENUS MUSCICAPA.

Muscicapa, Linn., Syst. Nat., i., p. 324 (1766).

Type, *M. grisola* (Linn.).

The bill in this genus is only moderately broadened, in com parison with some of the genera of Flycatchers. The wings are long, but fall considerably short of the length of the tail; the second primary exceeds the length of the secondaries and almost equals the third in length, being about equal to the fifth; the bill is somewhat long, the culminal ridge being more than twice the length of the bill at the gape.

The stronghold of the genus *Muscicapa* appears to be the continent of Africa, where no less than six or seven species are resident. Africa is also the winter home of our own migratory *M. grisola*, which is represented in the East by an allied species, *M. griseisticta*, which inhabits China in summer and winters in the Philippine Islands and the Moluccas.

THE COMMON FLYCATCHER. MUSCICAPA GRISOLA.

Muscicapa grisola, Linn., Syst. Nat., i., p. 328 (1766); Macg., Br. B., iii., p. 518 (1840); Newt. ed. Yarr., i., p. 220 (1872); Dresser, B. Eur. iii., p. 447, pl. 156 (1875); Sharpe, Cat. B. Brit. Mus., iv., p. 151 (1879); B. O. U. List Br. B., p. 40 (1883); Seeb., Br. B., i., p. 323 (1883); Saunders, Man., p. 149 (1889); Lilford, Col. Fig. Br. B., pt xxvi. (1893).

Adult Male.—General colour above uniform ashy-brown, streaked with darker brown on the head, and slightly paler on the rump and upper tail-coverts, the latter having obsolete pale margins; lesser wing-coverts like the back; median and greater coverts dark brown, externally ashy-brown, inclining to whitish at the ends; primary-coverts and quills dark brown, externally edged with reddish-brown, the inner secondaries paler at the ends; lores, sides of face, and ear-coverts uniform dark brown; cheeks and under surface of body dull white, the breast and sides of the body pale isabelline brown, faintly washed with brown streaks on the flanks, and more distinctly on the lower throat and fore-neck; thighs brown; under tail-coverts white; under wing-coverts and axillaries sandy-isabelline; quills dusky below, ashy along the inner webs; bill brown, paler at base of lower mandible; feet black; iris dusky brown. Total length, 5·8 inches; culmen, 0·6; wing, 3·4; tail, 2·35; tarsus, 0·55.

Range in Great Britain.—Nests almost universally throughout the three kingdoms, becoming rarer in the north, and seldom reaching the Orkneys and Shetland Islands, where it occurs only as a straggler.

Range outside the British Islands.—The Spotted Flycatcher breeds almost everywhere in Europe, including all the Mediterranean countries, as far east as Persia and Siberia and Turkestan. According to Mr. Seebohm its eastern breeding range is bounded by 110° E. long. In Scandinavia it is found as far north as Tromsö, and also at Archangel, but does not occur far north in the Urals, though it is found at Krasnoyarsk. In winter it is met with in North-western India, and in Africa, as far south as Natal, migrating by the Nile Valley and down the east coast. In Western Africa it is also an abundant winter visitant, and occurs in most collections from the Gold Coast. It probably migrates along the west coast of Africa, following the course of the rivers, as the late Mr. Jameson procured a specimen in the far interior at Yambuya, on the Aruwhimi River.

Habits.—The Spotted Flycatcher is a very late arrival in Great Britain, and comes to us some time after the bulk of the summer migrants have landed on our shores, appearing generally in the month of May, though earlier records of its visits in spring are related. In the summer it is a noticeable bird, and in most places a tame and familar species, taking up its abode in sheltered situations, and nesting in the verandahs and trellis-work on houses. A shelter seems indispensable to the Flycatcher's nest, and it builds the latter under the shade of overhanging creepers round a house, or in the crevice of the bark of a fruit-tree, where an overhanging bough protects the nest. As a rule the Flycatcher is seen in the open, sitting on a garden-fence, orchard-rail, or the bare branch of a tree, from which it sallies forth in pursuit of its insect food, generally returning to the perch from which it started. As a rule, the bird flies down on its prey and takes it in the air or off the ground, by a direct flight, but if the quarry is pursued for some distance, it is interesting to observe the way in which the Flycatcher turns and doubles in its flight after an insect. The food of the present species consists almost entirely of insects, flies, gnats, beetles, etc., but in the autumn it is said to feed on berries, and in Norway, according to Professor Collett, it is caught in snares set for Thrushes, and baited with mountain-ash berries.

The song of the Flycatcher is seldom heard, and has a very low tone. As a rule, the only sound it is heard to utter is its call-note, which resembles the sound of two stones being knocked together, a kind of "*it-chick*": this it frequently utters as it sits on its perch.

Nest.—Made of dry grass and moss, often principally composed of the latter, thickly lined with horse-hair and fine roots. The outside is often decorated with cobwebs and lichens, which causes the nest to assimilate so closely to its surroundings that it is difficult to discover. A nest which we found in 1892 in a crevice in the bark of a birch-tree, about twelve feet from the ground, had the outside decorated with bits of birch-bark, so as to render it exactly like the rest of the tree.

Eggs.—From four to six in number. The ground-colour varies from stone-colour to light green, but in each case the eggs are thickly spotted and blotched with reddish-brown, these spots mixed up with underlying spots and blotches of grey. The markings are often collected near the larger end of the egg, but are sometimes so thickly distributed as to hide the ground-colour. The shape varies considerably, some of the eggs being very long. Axis, 0·7–0.8 inch; diam., 0·55–0·6

THE PIED FLYCATCHERS. GENUS FICEDULA.

Ficedula, Sundev, Av. Meth. Tent., p. 23 (1872).

Type, *F. atricapilla* (Linn.).

The Pied Flycatchers, although not differing much in form from the typical Flycatchers, yet possess such peculiarities as to warrant their separation under a separate genus. The sexes differ markedly in colour. The nest is placed in holes of trees, and the eggs are blue.

THE PIED FLYCATCHER. FICEDULA ATRICAPILLA.

Muscicapa atricapilla, Linn., Syst. Nat., i., p. 326 (1766); Newt. ed. Yarr., i., p. 229 (1872); Dresser, B. Eur., iii., p. 453, pl. 158 (1875); Sharpe, Cat. B. Brit. Mus., iv., p. 157 (1879); B. O. U. List Br. B., p. 41 (1883); Seeb., Br. B., i., p. 328 (1883); Saunders, Man., p. 151 (1889).
Muscicapa luctuosa, (Scop.); Macg., Br. B., iii., p. 524 (1840).
Ficedula atricapilla, Salvad. Elench. Ucc. Ital., p. 84 (1886).

Adult Male.—General colour above black, as also the wing-coverts; the median series tipped with white, and the greater coverts entirely white; primary-coverts and quills dark brown, the inner primaries white at the base of the outer web, the secondaries with a conspicuous fawn-coloured spot at the base of both webs, and the inner secondaries white at the base, the innermost ones entirely white, with more or less black towards the end of the feathers; tail black, the three outer feathers marked with white, the outermost one being almost entirely white, with a brown mark near the end of the inner web; lores, sides of face, and ear-coverts, black; cheeks and under surface of body white, as also the under wing-coverts and axillaries; bill and legs black; iris brown. Total length, 5·5 inches; culmen, 0·4; wing, 3·15; tail, 2·15; tarsus, 0·7.

Adult Female.—Different from the male, being brown instead of black above, the greater coverts tipped with white; quills blackish-brown, the secondaries white at their bases, the inner primaries having a small white spot at the base of the outer web; upper tail-coverts black; tail-feathers blackish-brown, the three outer ones marked with white on the outer web; forehead and eyelid ochraceous-buff; sides of face, cheeks and throat, breast and sides of body pale ochraceous-brown, shading off into white on the abdomen and under tail-coverts; throat whitish in the middle. Total length, 5·1 inches; wing 2·95.

Range in Great Britain.—A regular summer migrant, and a bird of very local distribution. It is said to have nested occasionally in most of the southern counties, and in the midlands, but, as a rule, it is only found in the south on migration. It nests, however, regularly in the northern counties, in Northumberland, Durham, Yorkshire, Lancashire, Cheshire, and the border counties between England and Wales, and in several districts in the latter principality. In Scotland it becomes scarcer, but has apparently nested in Inverness-shire, and has even occurred in the Orkney Islands on migration.

Range outside the British Islands.—The Pied Flycatcher breeds in most of the countries throughout Europe and North Africa, extending up to 69° N. lat. in Scandinavia, 65° in Finland, and 60° in the Ural Mountains, its eastern breeding range being limited, according to Mr. Seebohm, by 70° E. long. In winter it visits North-eastern Africa and Senegambia.

NOTE.—The Collared Flycatcher, *Ficedula collaris*, has also been recorded as a British bird, but apparently on insufficient evidence.

Habits.—The Pied Flycatcher returns to its northern breeding home before the Spotted Flycatcher, and arrives towards the end of April. Although so differently coloured from the latter bird, its habits are very similar; and it frequents gardens on the Continent, but in England it is a bird of the wilder districts as a rule. Its food consists almost entirely of insects, but it also feeds on worms and berries at certain seasons. Its song is feeble and short, and like that of a Redstart.

Nest.—Made of grass, leaves, and feathers, with sometimes a little wool and hair added. It is always placed under cover, in a hole of a tree, or more rarely in a crevice of a wall or rock.

Eggs.—From four to eight, the last number being by no means uncommon, of a pale blue, perfectly spotless. Axis, 0·7–0·8 inch; diam., 0·55–0·6. Though coloured like those of the Hedge-Sparrow, the eggs of the Pied Flycatcher are smaller, and the shell is more fragile.

THE RED-BREASTED FLYCATCHERS. GENUS SIPHIA.

Siphia, Hodgson, Ind. Review, i., p. 651 (1839).

Type, *S. strophrata* (Hodgson).

This genus contains three species, which have been placed by ourselves and most ornithologists in the genus *Muscicapa*. Mr. Oates, however, one of the most careful systematic naturalists of the present day, considers that they belong to the genus *Siphia*, of which the type is the Himalayan *Siphia strophiata.* The difference of the colour in the sexes, we admit, is sufficient to separate them from the genus *Muscicapa.* The wing is differently shaped, the second primary being much shorter than the fifth, the rictal bristles being few in number, less than six, and the base of the tail conspicuously white.

THE RED-BREASTED FLYCATCHER. SIPHIA PARVA.

Muscicapa parva, Bechst., Natürg. Deutschl., iv., p. 505 (1795); Newt. ed. Yarr., i., p. 224 (1872); Dresser, B. Eur., iii., p. 465, pl. 189 (1875); Sharpe, Cat. B. Brit. Mus., iv., p. 161 (1879); B. O. U. List Br. B., p. 42 (1883); Saunders, Man., p. 153 (1889); Lilford, Col. Fig. Br. B., pt. xv. (1890).

Erythrosterna parva, Bp. Comp. List B. Europe and N. Amer., p. 25 (1838).

Siphia parva, Oates, Fauna Brit. Ind. Birds, ii., p. 9 (1890).

Adult Male.—General colour above ashy-brown, the forehead, sides of face, and ear-coverts grey, this colour also extending on to the sides of the neck; lores hoary-whitish; round the eye a ring of white feathers; wing-coverts ashy-brown like the back; quills dark brown, externally ashy-brown, the primaries narrowly edged with this colour; upper tail-coverts dark brown like the tail; two centre tail-feathers dark brown, the remainder for the greater part white, dark brown for the terminal third, and for a little distance along the outer web; cheeks, throat, and fore-neck clear orange; remainder of under surface white, the sides of the body inclining to buff, the thighs more ashy; under wing-coverts fulvous, like the sides of the body; quills brown below, fulvescent along the inner web; bill brown, the lower mandible paler at base; feet dark brown; iris brown. Total length, 5·1 inches; culmen, 0·4; wing, 2·6; tail, 2·0; tarsus, 0·65.

Adult Female.—Different from the male, brown above, with no grey on the head or neck, the sides of the face and ear-coverts also brown; wings brown, the greater coverts and quills edged with lighter brown; throat, chest, and sides of body suffused with yellowish-buff, the abdomen and under tail-coverts white. Total length, 4·9 inches; wings, 2·6.

Young.—Mottled all over, the upper surface being ochraceous-buff, with dusky brown edges to the feathers; upper wing-coverts with ochraceous tips; under surface light ochraceous-buff, with dusky tips to the feathers.

Range in Great Britain.—An occasional visitor, having been captured near Falmouth, in the Scilly Islands, in Norfolk, Yorkshire, Berwickshire, and once in co. Kerry, Ireland.

Range outside the British Islands.—The breeding home of the Red-breasted Flycatcher extends from Central Europe as far east as Turkestan, and, it is said, to Lake Baikal. Many writers, however, have confounded it with the eastern Red-breasted Flycatcher (*Siphia albicilla*), which breeds in Eastern Siberia and Northern China, and wanders south in winter to Southern China and the Burmese countries, reaching in the Indian Peninsula to Nepal and the neighbourhood of Dinapore in the plains. On the other hand, *S. parva* is a western bird, occupying in winter the western and central districts of India, coalescing with the range of *S. albicilla* in Eastern Bengal, but extending south to Mysore and the Nilghiris. In Europe it breeds in the Baltic Provinces and the St. Petersburg district, and has been met with as a straggler in other parts of Europe, having occurred in South Sweden, Denmark, Heligoland, the south-east of France, and Mr. Howard Saunders believes that it visits the south-west of Spain occasionally. To the Mediterranean countries, however, it is principally known as a winter visitor.

Habits.—Although this little species has more in common with the Spotted Flycatcher than the Pied Flycatcher, Mr. Seebohm describes its habits as differing from those of both the last-mentioned birds. He says that they reminded him both of a Flycatcher and a Tit, as he saw it catching insects on the wing with ease, and also fluttering before the trunk of a tree to pick an insect off the bark. The song was unobtrusive, something between the notes of a Robin and a Redstart. "The alarm-note was a '*pink*, *pink*, *pink*,' something like the *spink* of a Chaffinch, but softer, clearer, and quicker."

Nest.—This is described by Mr. Seebohm as a "very handsome little structure, almost entirely formed of green moss, with here and there a few scraps of lichen, and a downy feather or two. The inside is sparingly lined with fine dry grass and hairs. The nest-cavity measured about two inches in diameter, and one and a-half inch in depth."

Eggs.—From five to seven in number. They approach in colour the eggs of the Robin and the Common Flycatcher, but are not so heavily marked as those of the latter bird. The ground-colour is greenish-white, with reddish spots and blotches, sometimes collecting round the larger end. Others are nearly uniform creamy-buff, clouded with obscure reddish mottling. Axis, 0·65–0·7 inch; diam., 0·55–0 6.

THE SWALLOWS. FAMILY HIRUNDINIDÆ.

These birds differ considerably from the other *Passeriformes*, and they possess a striking difference in their pterylosis, the spinal feather tract being forked on the back. The primary-quills are only nine in number, the tail-feathers twelve. The bill is broad and flat, and the gape is very wide as with Swifts and Goatsuckers, which, like the Swallows, catch their food on the wing, The front of the tarsus is smooth, and the hinder aspect is bilaminated longitudinally. Swallows are found in nearly every portion of the globe, from very far north to very far south. In the northern portion of their range they are strictly migratory, and only come in summer, and, unlike other Passerine birds, they moult only in their winter home, and do not renew their plumage in the autumn before taking their long journey southward.

THE HOUSE-MARTINS. GENUS CHELIDON.

Chelidon, Boie, Isis, 1822, p. 550.

Type, *C. urbica* (Linn.).

The House-Martins are very easily recognisable by their feathered feet and toes, and by the broad white band across the rump, which is very conspicuous when the birds are flying. There are five species of *Chelidon*, one, *C. urbica*, being the species which visits England; a second, *C. dasypus*, representing it in Japan and the far east; while the intermediate area is occupied by the Siberian House-Martin, *C. lagopus*. Two species, *C. cashmiriensis* and *C. nipalensis*, are Himalayan. It will thus be seen that all the House-Martins are denizens of the Old World only.

THE HOUSE-MARTIN. CHELIDON URBICA.

Hirundo urbica, Linn., Syst. Nat., i., p. 344 (1766); Macg., Br. B., iii., p. 573 (1840); Seeb., Br. B., ii., p. 178 (1884).

Chelidon urbica, Dresser, B. Eur., p. 495, pl. 162 (1875); Newt. ed. Yarr., ii., p. 349 (1880); B. O. U. List Br. B., p. 44 (1883); Saunders, Man., p. 157 (1889); Lilford, Col. Fig. Br. B., pt. iii. (1886).

Adult Male.—Purplish blue-black; wings and tail-feathers black, with a slight greenish reflection externally; rump and upper tail-coverts black; cheeks and under surface of body pure white, with a tinge of smoky-brown on the flanks; under wing-coverts and axillaries smoky-brown; bill and feet black; iris dark brown. Total length, 5·5 inches; culmen, 0·35; wing, 4·5; tail, 2·5; tarsus, 0·45.

Adult Female.—Similar to the male in colour. Total length, 5 inches; wing, 4·5.

Young.—Differs from the adults in being duller, and distinguished by its yellow gape and the white tips to the secondary quills; the throat is smoky-brown.

Range in Great Britain.—Occurs everywhere in summer, and breeds even in the Hebrides, and in the Orkneys and Shetlands.

Range outside the British Islands.—The House-Martin appears to be found everywhere in Europe, but becomes rarer in the north of Scandinavia, and was not met with by Messrs. Seebohm and Harvie-Brown on the Petchora, though it is said to occur on the Urals as high as 60°. Its eastern range is established as far as Tashkend in Central Asia, and it may be the species of the Altai Mountains. In winter the Martin visits Africa as far south as Natal, and also occurs sparingly in North-western India, and has been met with as far south as the Nilghiris.

Habits.—Arrives a little later than the Common Swallow, towards the middle or end of April, and leaves again from September onwards; on rare occasions Martins have been observed in England in November and December. Like all of the family, the House-Martin is untiring on the wing in pursuit of the gnats and small flies on which it feeds. It is not only found in country districts, but even frequents towns and builds its clay nest under the sheltering eaves of many a suburban villa. Soon after its arrival it may be seen flying down to a puddle in the road or a pond to get the mud with which it makes its nest. Sometimes the nests are placed against rocks, especially in those localities where there is no sheltering building to be made use of.

Nest.—Made of small nodules of mud, the nest being lined with dry grass and a few feathers. It is rather large, and has the aperture near the top, from which the parent birds and the young are often seen protruding their heads.

Eggs.—From four to six in number, and glossy white. Axis, 0·75–0·85 inch; diam., 0·55–0·6.

THE BANK-MARTINS. GENUS CLIVICOLA.

Clivicola, Forster, Syn. Cat. Brit. B., p. 58 (1817).
Type, *C. riparia* (Linn.).

These birds are distinguished from the House-Martins and the Chimney-Swallows by several characters. They have a square tail, without the elongated outer feather, which distinguishes the genus *Hirundo*, and they lack the feathered toes which characterise the genus *Chelidon*. Curiously enough, however, this feathered element in the feet is not altogether absent in the genus *Cotile*, for at the back of the base of the tarsus there is a tiny tuft of feathers.

There are nine different species of *Cotile* known to science, two Palæarctic, six Ethiopian, and one Indian. The species of Europe, *C. riparia*, is also a common North-American bird, wintering in the Neotropical Region.

THE SAND-MARTIN. CLIVICOLA RIPARIA.

Hirundo riparia, Linn, Syst. Nat., i., p. 344 (1766); Macg., Br. B., iii., p. 595 (1840); Seeb., Br. B., ii., p. 184 (1884).

Clivicola europæa, T. Forster, Syn. Cat. Brit. B., p. 58 (1817).

Cotile riparia, B. O. U. List Br. B., p. 44 (1883); Sharpe, Cat. B. Brit. Mus., x., p. 96 (1885); Saunders, Man., p. 159 (1889).

Cotyle riparia, Dresser, B. Eur, iii., p. 505, pl. 163 (1874); Newton, ed. Yarr., ii., p. 355 (1880); Lilford, Col. Fig. Brit. B., part iii. (1886).

Adult Male.—Brown above, including the wings and tail; sides of face also brown; cheeks and under surface of body pure white, with a broad collar of dark brown feathers across the fore-neck; sides of body also washed with brown; under wing-coverts and axillaries dark brown; bill blackish-brown; feet dark brown; iris hazel. Total length, 4·8 inches; culmen, 0·3; wing, 4·25; tail, 2·1; tarsus, 0·45.

Adult Female.—Similar in plumage to the male. Total length, 5 inches; wing, 4·2.

Young.—Like the adults, but readily distinguished by sandy-rufous or whitish edgings to the feathers of the back and wings; throat slightly tinged with pale rufous.

Range in Great Britain.—Occurs everywhere throughout the three kingdoms in suitable localities, and breeds.

Range outside the British Islands.—Breeds everywhere throughout Europe, up to the highest point of Scandinavia, but in lessening numbers in the north. It occurs commonly in summer at Archangel, was met with by Messrs. Seebohm and Harvie-Brown on the Petchora river, and is found in the Urals up to 50° N. lat. Elsewhere in Europe and Northern Asia it is a breeding bird, and extends right across to Eastern Siberia. It is also distributed over the greater part of North America during the breeding season, wintering in Central and South America, and in the Old World it winters in Burma and in India, and has been found in various localities in Africa at the same season.

Habits.—Arrives in England in April, and leaves in September, seldom staying as late as October. Its nesting is conducted in a different manner from that of the other two British Swallows, for the Sand-Martin burrows in a hole in a bank, and makes its nest at the end of a tunnel of considerable length. Thus its breeding haunts are determined to a great extent by the presence or absence of suitable banks for the drilling of the tunnels. The sandy banks are naturally soft, and are pierced with numerous holes, close together, for the Sand-Martin is gregarious in its nesting. In the autumn large numbers collect together on telegraph-wires, where they sit in company with Swallows and House-Martins, and they also roost in the reed-beds of the Thames Valley in great flocks.

Nest.—A very rough little foundation of grass and straw, with a few large feathers for lining. It is placed at varying depths in the sandy bank occupied by the bird, the tunnels varying in length from two feet to three feet, or even more.

Eggs.—Pure white, with very little gloss. Axis, 0·7–0·75 inch; diam., 0·5–0·55.

THE CHIMNEY-SWALLOWS. GENUS HIRUNDO.

Hirundo, Schaeffer, Elem. Orn., Genus 100, pl. xl. (1779).

Type, *H. rustica* (Linn.).

The Swallows differ from the Sand-Martins and House-Martins in having the tail much longer and the outer tail-feathers elongated, with a marked indentation on the inner web.

The members of the genus *Hirundo* are found everywhere in the world, and about forty species are known. Those inhabiting the tropics are resident, while those which are characteristic of the northern and southern portions of the globe are migratory.

THE CHIMNEY-SWALLOW. HIRUNDO RUSTICA.

(*Plate XXVIII.*)

Hirundo rustica, Linn., Syst. Nat., i., p. 343 (1766); Macg., Br. B., iii., p. 558 (1840); Dresser, B. Eur., iii., p. 477, pl. 160, fig. 1 (1875); Newt. ed. Yarr., ii., p. 340 (1880); B. O. U. List Br. B., p. 42 (1883); Seeb., Br. B., ii., p. 171 (1884); Sharpe, Cat. B. Brit. Mus., x., p. 128 (1885); Lilford, Col. Fig. Br. B., pt. iii. (1886); Saunders, Man., p. 155 (1889).

Adult Male.—Above glossy purplish blue-black, the wings and tail blackish, with a slight gloss of green externally; head like the back; the forehead deep rufous; ear-coverts purplish-blue; cheeks and throat deep rufous; the rest of the under surface pale rufous-buff; on the fore-neck a collar of purplish-blue; bill and feet black; iris dark brown. Total length, 7·3 inches; culmen, 0·35; wing, 5·05; tail, 4·0; tarsus, 0·5.

Adult Female.—Differs from the adult only in having the outer tail-feathers rather shorter, and in not being so rufescent underneath. Total length, 6·6 inches; wing, 4·65.

Young.—Duller than the adults, and not so glossy; the rufous frontal mark much smaller; many of the wing-coverts and the feathers of the lesser rump and upper tail-coverts with rufescent edges.

Range in Great Britain.—A regular summer visitor to every part of our islands, but breeding less frequently in the north.

Range outside the British Islands. — Found universally over Europe, even to the high north. It breeds as far as the Yenesei Valley, and in a few places in the Himalayas, being replaced in China and the far east by an allied species of Swallow, *Hirundo gutturalis.* Both species winter in the south, *H. rustica* in Africa and India, a few further east still; the winter ranges of the two Chimney-Swallows overlap, as *H. gutturalis* winters in Southern China, the Moluccas, the Burmese and Malayan countries, and the eastern portion of the Indian Peninsula.

Habits.—The ways of the Chimney-Swallow have been often described and are known to every one, the bird's graceful flight being observed in the open fields, and, more rarely, in the neighbourhood of towns, where, however, they often build in the chimneys of old buildings. Mr. Edward Bartlett has related how he discovered Swallows' nests with young birds eight feet down a narrow shaft of a chimney in an old Elizabethan mansion at Maidstone. All kinds of other situations are chosen by the bird for its nest: this being sometimes on a beam in a shed, and at others in places of the most eccentric description, such as on the china shade over an electric lamp in a stable, etc.

Nest.—Composed of mud, mixed with grass and straw, the lining consisting of dry grass and feathers. In England the nest is generally built on a beam or rafter, which serves as a support to it, but on the Continent it is mostly built in the same way as that of the House-Martin, against a wall or a beam, while the bird is also sometimes noticed building against cliffs.

Eggs.—From four to six in number, varying a good deal in size and shape, some being much longer than others. Ground-colour creamy or china-white, spotted with reddish or purplish-brown, with underlying spots of violet-grey intermixed, the large end being often clouded, but seldom a ring of spots being found. Occasionally the blotches and spots are much lighter and even greenish-brown in colour. Axis, 0·75–0·85 inch; diam, 0·5–0·6.

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